

LGH-F-RX3-E

1. COMPARISON OF PRIMARY BUILDING VENTILATION METHODS	ERV-2
2. LOSSNAY® PRINCIPLES.....	ERV-2
2.1. LOSSNAY® ENERGY RECOVERY VENTILATORS - CORE.....	ERV-2
2.2. LOSSNAY® CONSTRUCTION	ERV-3
2.3. CALCULATION OF TOTAL ENERGY RECOVERY EFFICIENCY.....	ERV-3
2.4. UNBALANCED AIRFLOW CORRECTION	ERV-4
2.5. LOSSNAY® OPERATION / VENTILATION MODES.....	ERV-4
2.6. AUTOMATIC VENTILATION SWITCHING - BYPASS DAMPER OPERATION	ERV-5
2.7. IMPORTANCE OF FILTERS	ERV-5
2.8. ENERGY RECOVERY VENTILATION TERMINOLOGY	ERV-7
3. LOSSNAY® MODELS AND SPECIFICATIONS.....	ERV-8
LGH-F300RX ₃ -E.....	ERV-8
LGH-F470RX ₃ -E.....	ERV-10
LGH-F600RX ₃ -E.....	ERV-12
LGH-F1200RX ₃ -E.....	ERV-14
4. WIRING DIAGRAMS.....	ERV-16
5. SOUND ANALYSIS	ERV-18
5.1. SOUND ANALYSIS	ERV-18
5.2. LGH-F-RX ₃ -E NC CURVES	ERV-18
6. FAN SPEED CONTROL CONSIDERATIONS.....	ERV-20
7. INSTALLATION	ERV-20
7.1. INSTALLATION DIAGRAMS	ERV-20
7.2. ALTERNATE INSTALLATION FOR LOSSNAY®.....	ERV-21
7.3. SELECTING DUCT ATTACHMENT DIRECTION	ERV-22
7.4. INSTALLATION OF SUPPLEMENTARY FAN DEVICES AFTER LOSSNAY® UNIT.....	ERV-23
8. ELECTRICAL INSTALLATION	ERV-23
9. SYSTEM CONTROL EXAMPLES.....	ERV-24

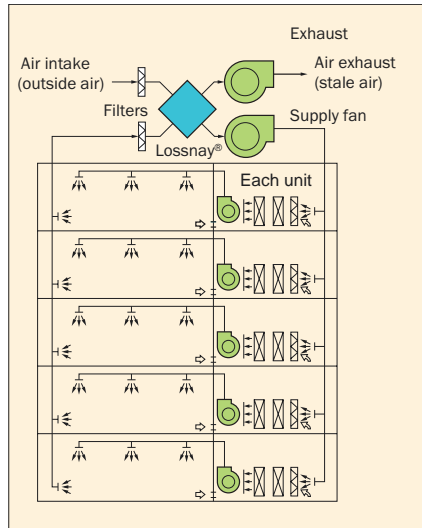


1. COMPARISON OF PRIMARY BUILDING VENTILATION METHODS

There are two main ventilation methods:

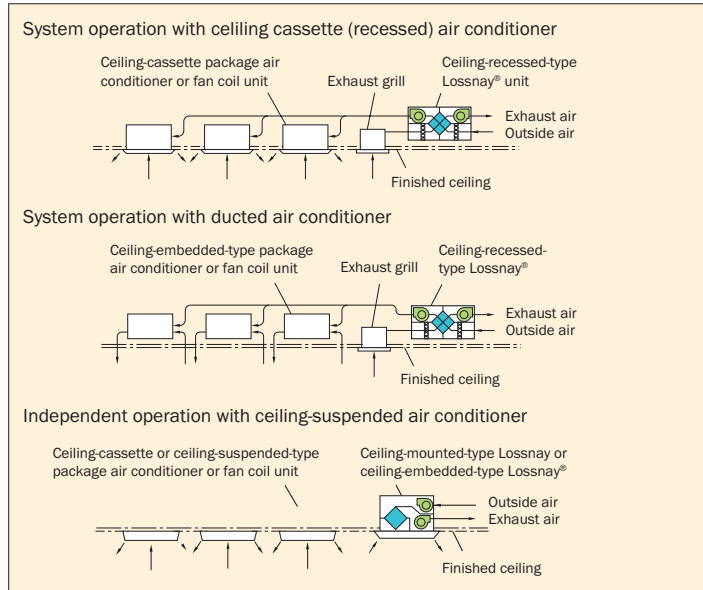
Centralized Ventilation Method

This is mainly used in large buildings, with the outside air intake being installed in one machine room. For this method, primary treatment of the outside air, such as energy recovery and dust removal, is performed before distribution to the building duct system.



Independent Zoned Ventilation Method

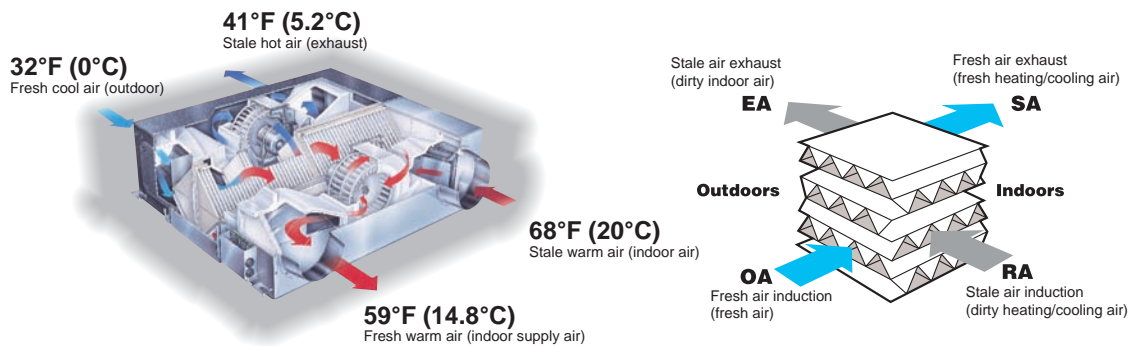
This is mainly used in small to medium-sized buildings, with areas being ventilated using outside air intakes from independent ventilation devices. The rate of use of this method has recently increased as zone conditioning and independent control have become more feasible.



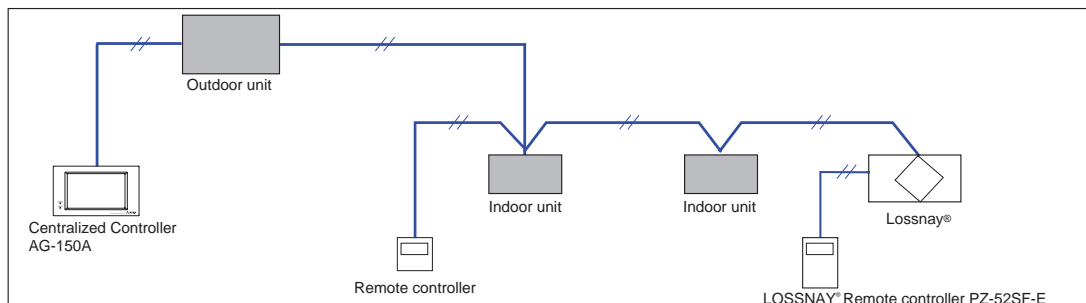
2. LOSSNAY® PRINCIPLES

2.1. Lossnay® Energy Recovery Ventilators – Core

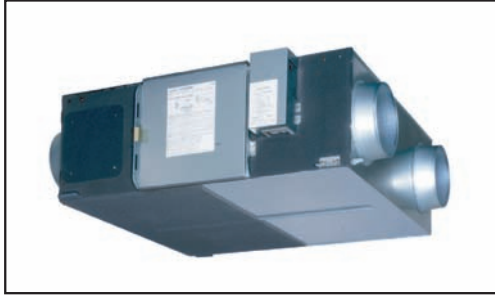
The sophisticated energy recovery technology of the LOSSNAY® core is constructed from a specially treated cellulose membrane separating cross-flow air passages with a corrugated structure for strength and durability. See below, right for an illustration of the LOSSNAY® core.



CITY MULTI® can integrate LOSSNAY® ERVs into the air conditioning system, providing the best overall solution to ventilation and air-conditioning.



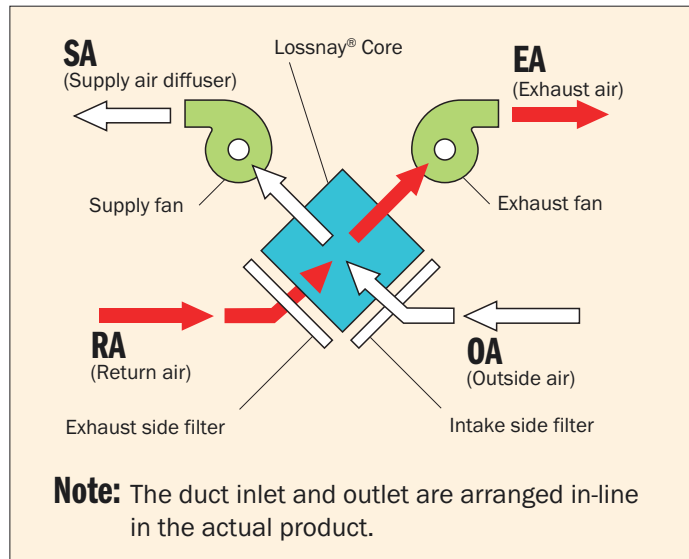
Lineup of LOSSNAY® ERV units



LGH-F300RX3-E	300 cfm	1-phase, 208/230V, 60Hz
LGH-F470RX3-E	470 cfm	1-phase, 208/230V, 60Hz
LGH-F600RX3-E	600 cfm	1-phase, 208/230V, 60Hz
LGH-F1200RX3-E	1200 cfm	1-phase, 208/230V, 60Hz

2.2. Lossnay® Construction

Lossnay® ERVs are constructed so that the exhaust air passage from the indoor side to the outdoor side (RA → EA) and the outside air passage from the outdoor side to the indoor side (OA → SA) cross. The Lossnay® energy recovery unit features the Lossnay® Core, which is installed at this cross point and recovers the heat by conduction through the separating medium between the airflows, and latent energy by molecular transfer through the separation plate driven by vapor pressure differential between the airstreams. This enables the total energy loss during exhaust to be greatly reduced.



SA = Supply Air; RA = Return Air
 EA = Exhaust Air; OA = Outside Air

2.3. Calculation of Total Energy Recovery Efficiency

The Lossnay® Core's energy recovery efficiency can be considered using the following three transfer rates:

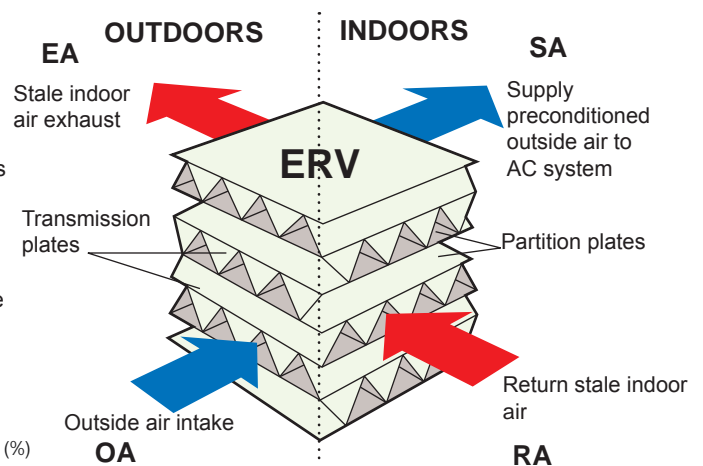
1. Temperature (sensible heat) recovery efficiency
2. Humidity (latent heat) recovery efficiency
3. Enthalpy (total heat) recovery efficiency

The energy recovery effect can be calculated if two of the above efficiencies are known. (Lossnay® performance and cost analysis can also be determined using Mitsubishi Electric ERValue® software.

- Each recovery efficiency can be calculated with the formulas in the table.
- When the supply and exhaust air volumes are equal, the heat recovery efficiencies on the supply and exhaust sides are the same.
- When the supply and exhaust air volumes are not equal, the total heat recovery efficiency is low if the exhaust volume is lower, and high if the exhaust volume is higher.

Item	Formula
Temperature recovery efficiency (%)	$\eta_t = \left[\frac{t_{OA} - t_{SA}}{t_{OA} - t_{RA}} \right] \times 100$
Enthalpy recovery efficiency (%)	$\eta_i = \left[\frac{i_{OA} - i_{SA}}{i_{OA} - i_{RA}} \right] \times 100$

η = Efficiency (%)
 t = Dry Bulb Temperature (°F)
 i = Enthalpy (Btu/lb)



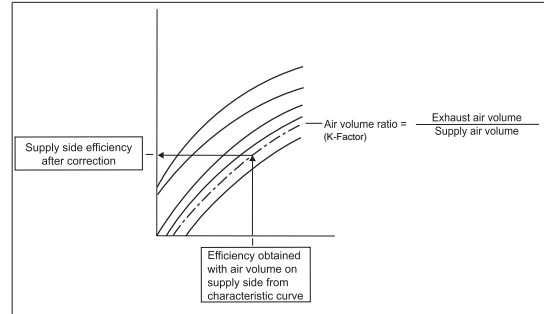
Calculation of Supply Air Condition After Passing Through Lossnay®

If the Lossnay energy recovery efficiency and the conditions of the room and outdoor air are known, the conditions of the air entering the room and the air exhausted outdoors can be determined with the following formulas in the table.

	Supply side	Exhaust side
Temperature	$t_{SA} = t_{OA} - (t_{OA} - t_{RA}) \times \eta_t$	$t_{EA} = t_{RA} + (t_{OA} - t_{RA}) \times \eta_t$
Enthalpy	$i_{SA} = i_{OA} - (i_{OA} - i_{RA}) \times \eta_i$	$i_{EA} = i_{RA} + (i_{OA} - i_{RA}) \times \eta_i$

2.4. Unbalanced Airflow Correction

In unbalanced applications, it is necessary to calculate the pressure drops of the two air streams separately using the applicable chart and correct the efficiencies using the instructions and the K-Factor chart below.



1. In unbalanced airflow applications, the external static pressure must be calculated for each air stream separately using the ESP curves for the applicable product.

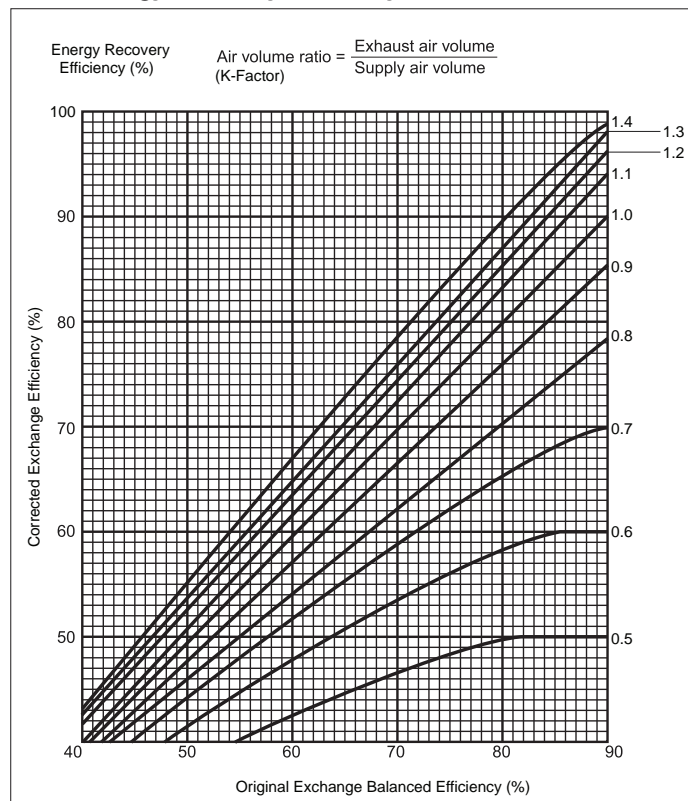
2. The temperature effectiveness must also be corrected using the K-Factor chart (at right).

A. Determine which correction factor to use by calculating the K-Factor (Air Volume Ratio).

B. Determine the balanced airflow effectiveness from the applicable product graphs using the outside airflow (CFM).

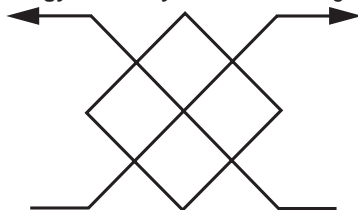
C. Correct the effectiveness for the unbalanced airflow by finding the Original Exchange Balanced Efficiency (%), then find the appropriate K-Factor Curve in the chart. From that point, read the Corrected Exchange Efficiency (%) on the left side of the chart.

Energy Recovery Efficiency Correction Curve

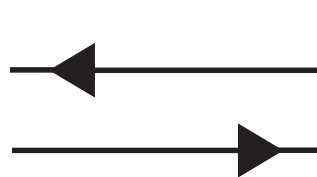


2.5. Lossnay® Operation / Ventilation Modes

1. **Energy Recovery — Heat Exchange**



2. **Bypass — No Exchange**



3. **Automatic — Heat Exchange: Bypass**

- In cooling, the automatic mode accomplishes an energy savings function. When the inbound outside air is $\geq 7.2^\circ\text{F}$ cooler than the outbound exhaust air, the bypass damper opens in the outbound airstream. This increases airflow and provides cooler air to the conditioned space.

- In heating, the automatic mode may not be suitable without supply-air preheating.

Lossnay® technology is a full enthalpic energy exchange that recovers both sensible energy or "heat recovery" and latent energy or "moisture transfer" between air streams.



2.6. Automatic Ventilation Switching - Bypass Damper Operation

Effect of Automatic Ventilation Mode

The automatic damper mode automatically provides the correct ventilation for the conditions in the room. It eliminates the need for manual switch operations when setting the Lossnay ventilator to "bypass" ventilation. The following shows the effect "bypass" ventilation will have under various conditions. For automatic operation, when the air conditioning system is in the cooling mode, the bypass damper will open if the entering outside air temperature is 7.2°F or more lower than the exhaust air temperature.

- (1) Reduces cooling load--If the air outside is cooler than the air inside the building during the cooling season (such as early morning or at night), bypass ventilation will draw in the cooler outside air and reduce the cooling load on the system.
- (2) Cooling using outdoor air--During cooler season (such as between spring and summer or between summer and fall), if the people in a room cause the temperature of the room to rise, bypass ventilation will draw in the cool outside air and use it to cool the room.
- (3) Night purge--Bypass ventilation can be used to release hot air from inside the building that has accumulated during the hot summer season.
- (4) Office equipment room cooling--During the cold season, outdoor air can be drawn in to cool rooms where the temperature has risen due to the use of office equipment. (Only when interlocked with CITY MULTI® and Mr. Slim® indoor units.)

2.7. Importance of Filters

Clean air is necessary for humans to live a comfortable and healthy life. Besides atmospheric pollution that has been generated with the development of modern industries and the growth in the use of automobiles, air pollution in air-tight room has progressed to the point where it adversely affects the human body, and is now a major problem.

Hay fever is now a symptom often seen in the spring and demands for preventing pollen from entering rooms are increasing.

2.7.1. Data Regarding Dust

The particle diameter of dust and applicable range of filters are shown in Table 1, and representative data regarding outdoor air dust concentrations and indoor dust concentrations is shown in Table 2.

Table 1 Aerosol particle diameters and applicable ranges of various filters

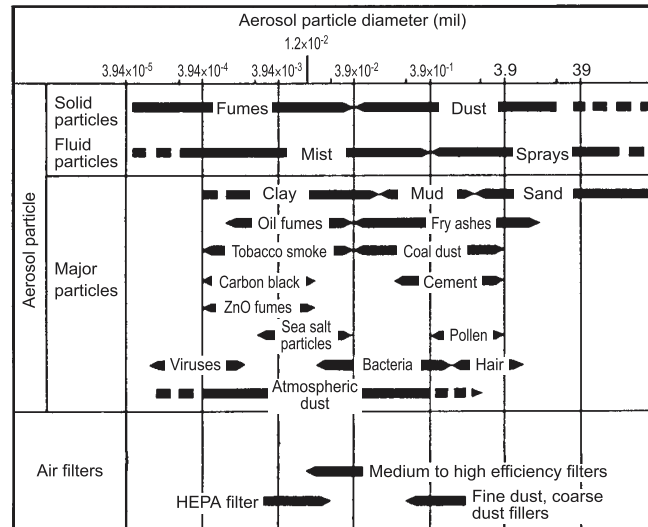


Table 2 Major dust concentrations

Type	Reference data	
Outdoor air floating dust concentration	Large city	6.24 - 9.36 × 10 ⁻⁹ (lb/ft ³)
	Small city	6.24 × 10 ⁻⁹ (lb/ft ³)
	Industrial districts	1.25 × 10 ⁻⁹ (lb/ft ³)
Indoor dust concentration	General office	3.5 × 10 ⁻⁴ (ounce/h)
	Stores (product vending stores)	0.00018 (ounce/h)
	Applications with no tobacco smoke	0.00018 (ounce/h)

Remarks:

1. The core diameter of outdoor air dust is said to be 0.08 mil, and the 11 types of dust (average diameter 0.08 mil) as set by JIS Z 8901 as performance test particles are employed.
2. Dust in office rooms is largely caused by smoking, and the core diameter is 0.028 mil. The 14 types of dust (average 0.031 mil) as set by JIS Z 8901 as performance test particles are employed.
3. The core diameter of dust generated in rooms where there is no smoking is approximately the same as outdoor air.
4. Smoking in general offices (as per Japan):
 - Percentage of smokers : Approx. 70% (adult men)
 - Average number of cigarettes : Approx. 1/person·h (including non-smokers)
 - Smoking length of cigarette : Approx. 1.6 inch
 - Amount of dust generated by one cigarette : Approx. 3.5 × 10⁻⁴ ounce/cigarette



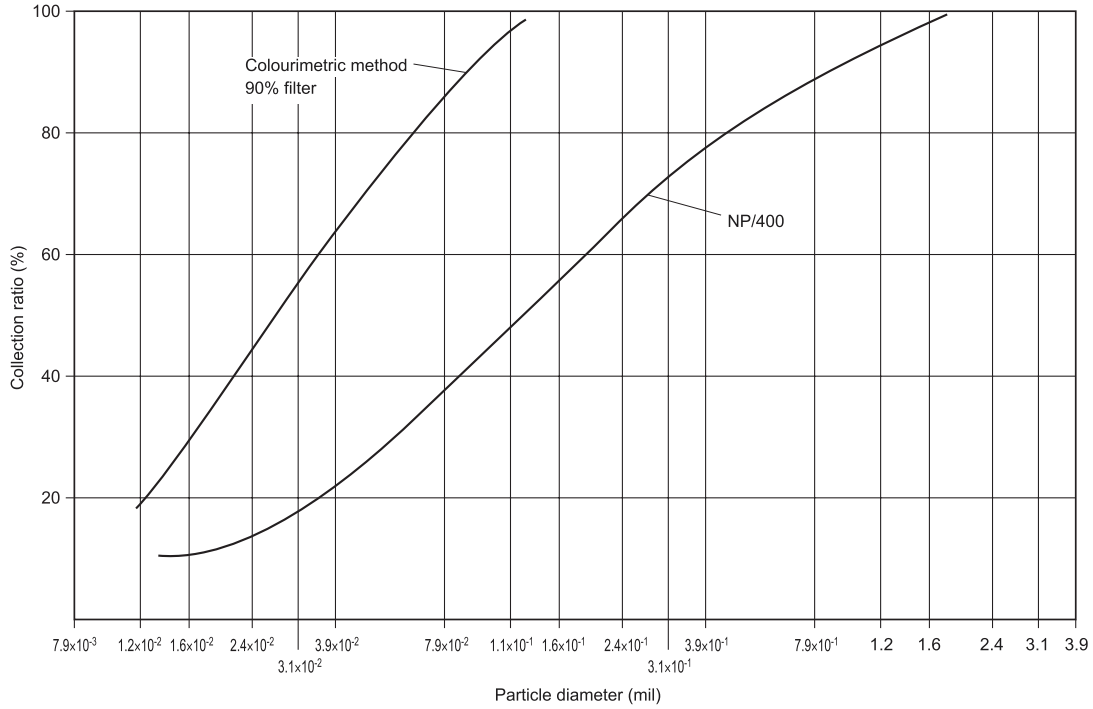
2.7.2. Calculation Table for Dust Collection Efficiency of each Lossnay® Filter

Measurement method Tested dust		Applicable model	AFI Gravitational method	ASHRAE Colorimetric method	Counting method (DOP method)		Dust Size (µm)*	MERV Rating	Application
			Compound dust	Atmospheric dust	JIS 14 types DOP 3.1x10 ⁻² mil	DOP 1.1x10 ⁻² mil			
Pre-filter	NP/400 (EU3)	Commercial Lossnay (LGH)	82%	8% - 12%	5% - 9%	2% - 5%	6.6-8.6	6; 3.0-10.0 µm less than 49.9%	Protection of heat recovery element

* Note: MERV rating is estimation from efficiency test data of AFI Gravitational method and ASHRAE Colorimetric method.

2.7.3. Pressure Loss

The pressure loss of the filter used within the Lossnay® units is shown below, expressed in terms of collection ratio (%).



2.8. Energy Recovery Ventilation Terminology

Balanced Ventilation

A ventilation strategy using both an exhaust air blower and a supply or make-up air blower providing the same airflow and pressure so as not to pressurize or depressurize a building.

CFM

Cubic Feet per Minute, a measure of air volume.

Delayed Operation

The On/Off operation of the Lossnay® unit can be delayed for 30 minutes following the operation of the indoor unit. When using PZ-41SLB-E, the delay can be set for 10, 20, 30, 40, 50 and 60 minutes.

ESP

External static pressure, available motive force to propel air in a duct system from a blower or ventilator.

Enthalpy Exchange

The exchange of both sensible and latent heat energy.

Exhaust Air (EA)

Air expelled from indoor space.

External Control Input

An On/Off input signal for operating the Lossnay® unit that can be sent from an external device. The signal may be a 12V-24V DC or an uncharged a-contact signal.

Interlocked Lossnay®

Lossnay® unit linked to CITY MULTI® or Mr. Slim® indoor units that receive signals and operates via the indoor unit's remote controller.

Non-interlocked Lossnay®

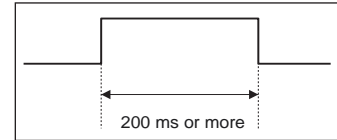
Lossnay unit controlled independently of CITY MULTI® or Mr. Slim® indoor units by the Lossnay® remote controller and/or centralized controller.

Outdoor Air (OA)

Air drawn from outdoors - ventilation air.

Pulse Input

When the control signal from an external device outputs a pulse such as the one shown at right, the pulse input control



is performed by the Lossnay® unit. (Optional DIP switch 2-2 ON) 200 ms or more.

Remote Operation

This is used for enabling/disabling the On/Off control signal from an external device and for setting interlocked operation of the external device and the Lossnay unit.

ON/OFF interlock: Enables both ON → OFF and OFF → ON external signals.

ON interlock: Enables OFF → ON external signal. Disables ON → OFF external signal.

OFF interlock: Enables ON → OFF external signal. Disables OFF → ON external signal.

External priority: Same as on/off interlock but the OFF signal from the remote controller is ignored when the external control signal is on.

Return Air (RA)

Air drawn from indoor space.

Supply Air (SA)

Air supplied to indoor space.

Ventilation Modes

Energy Recovery – energy exchange through Lossnay® core at all times.

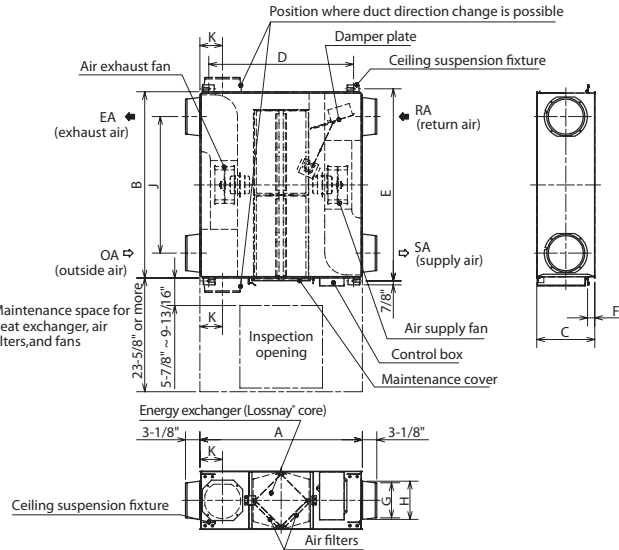
Bypass – no exchange – bypass damper open.

Automatic – energy exchange or bypass as determined by present temperature sensor in inlet and discharge airstreams.

3. LOSSNAY® MODELS AND SPECIFICATIONS

Model specifications and materials list for Lossnay® units

Model LGH-F300RX3-E



Unit	Dimensions			Ceiling suspension fixture pitch			Nominal diameter	Duct connecting flange		Duct pitch		Weight
	A	B	C	D	E	F		G	H	J	K	
inches	34-15/16	40	12-1/2	31-1/8	41-1/4	1-9/16	ø8	ø7-9/16	ø8-3/16	29-5/16	4-7/8	73 lb
mm	888	1016	318	791	1048	40	ø203	ø192	ø208	745	124	33 kg

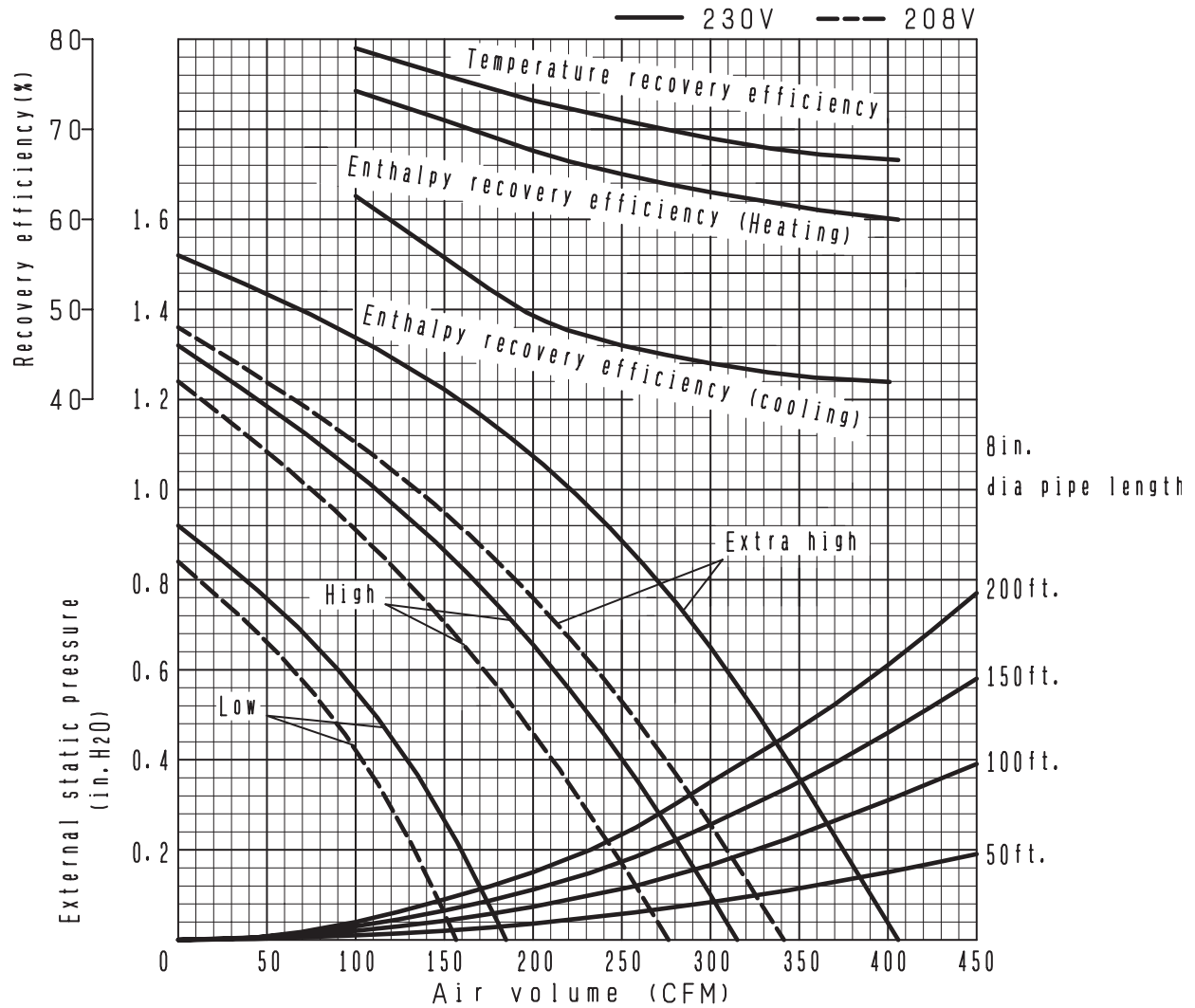
Model LGH-F300RX3-E Specifications Table

Control signal	Serial single communication (M-NET transmission)					
Heat exchange system	Air-to-air total heat (sensible heat + latent heat) exchange					
Heat exchanger material	Partition, spacing plate-special treated paper					
Cladding	Galvanized steel sheet					
Heat insulating material	Self-extinguishing urethane foam					
Motor	Totally enclosed capacitor permanent split-phase induction motor, 4 poles, 2 units					
Blower	8 3/4in dia. centrifugal fan					
Supply air	5°F (※) to 104°F, RH 80% or less					
Operating environment	14°F to 104°F, RH 80% or less (General environment conditions for the Lossnay installation area)					
Functions	Lossnay ventilation/Bypass ventilation High(Extra high)-Low switching					
Weight	73lbs					
Power supply	Single phase 208/230V 60Hz					
Ventilation mode	Lossnay ventilation			Bypass ventilation		
Fan speed	Extra high	High	Low	Extra high	High	Low
Current (A)	1.3	1.1	0.6	1.4	1.1	0.6
Power consumption (W)	278	260	146	280	262	146
Air volume (CFM)	300	300	180	300	300	180
External static pressure (in. H ₂ O)	0.65	0.10	0.02	0.65	0.10	0.02
Temperature recovery efficiency (%)	69	70	77	-	-	-
Enthalpy recovery efficiency (%)	Heating	62	64	71	-	-
	Cooling	44	46	55	-	-
Sound level (dB)	Measured at 59in. under the center of panel	36	32	25	36	32
	Air outlets	44	40	31	44	40
Starting current	Under (2.5A) or less					
Insulation resistance	10MΩ or more (500V megger)					
Dielectric strength	AC 1500V 1 minute					

※Above specifications are for 230V, 60Hz.



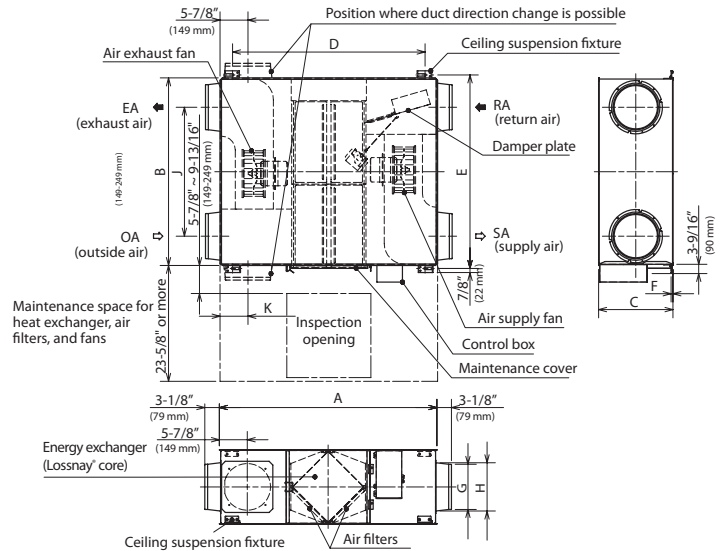
Model LGH-F300RX3-E Characteristic Curve



*** Attention**

1. The defrost mode must be operated at 14°F or below.
 2. The current, power consumption, and efficiency are based on the above air flow rate.
 3. The sound at the air outlets are the values at a 45° angle, 59 in. in front of the unit.
 4. Fan speed can be switched between high and low.
The main unit switch must be used to select the extra-high fan speed.
 5. Air conditions as per ARI standard 1060-2005.
- *Specifications may be subject to change without notice.

Model LGH-F470RX3-E



Unit	Dimensions			Ceiling suspension fixture pitch			Nominal diameter	Duct connecting flange		Duct pitch		Weight
	A	B	C	D	E	F		G	H	J	K	
inches	45-13/16	39-1/2	15-11/16	40-9/16	40-13/16	3/8	ø10	ø9-1/2	ø10-3/16	27-3/16	5-7/8	143 lb
mm	1164	1003	398	1030	1037	9.5	ø254	ø241	ø259	691	149	65 kg

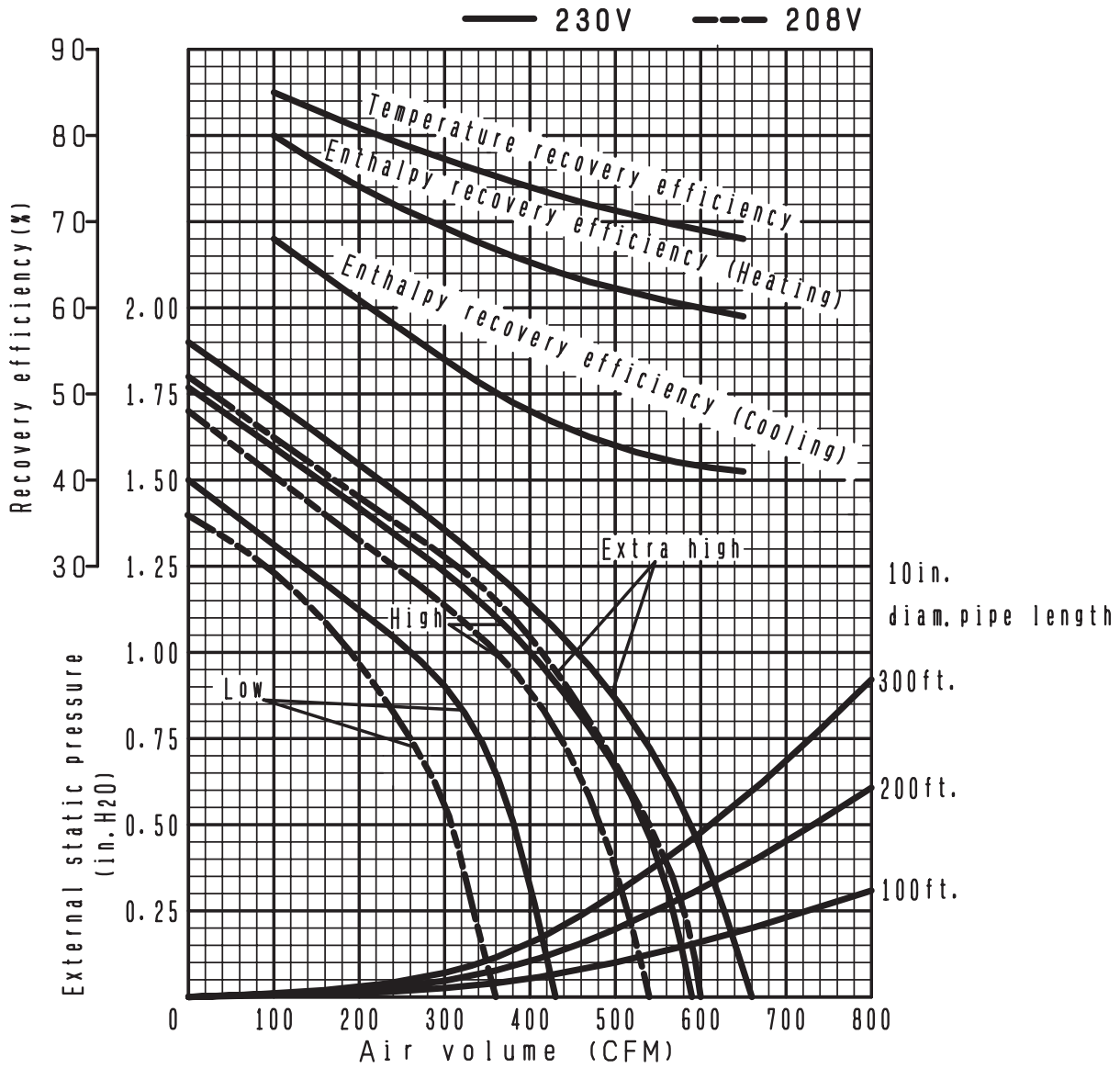
Model LGH-F470RX3-E Specifications Table

Control signal	Serial single communication (M-NET transmission)					
Heat exchange system	Air-to-air total heat (sensible heat + latent heat) exchange					
Heat exchanger material	Partition, spacing plate-special treated paper					
Cladding	Galvanized steel sheet					
Heat insulating material	Self-extinguishing urethane foam					
Motor	Totally enclosed capacitor permanent split-phase induction motor, 4 poles, 2 units					
Blower	9 5/8in. dia. centrifugal fan					
Supply air	5°F (※) to 104°F, RH 80% or less					
Operating environment	14°F to 104°F, RH 80% or less (General environment conditions for the Lossnay installation area)					
Functions	Lossnay ventilation/Bypass ventilation High(Extra high)-Low switching					
Weight	143 lbs					
Power supply	Single phase 208/230V 60Hz					
Ventilation mode	Lossnay ventilation			Bypass ventilation		
Fan speed	Extra high	High	Low	Extra high	High	Low
Current (A)	2.5	2.4	1.7	2.5	2.3	1.7
Power consumption (W)	560	525	375	545	510	370
Air volume (CFM)	470	470	380	470	470	380
External static pressure (in. H ₂ O)	0.96	0.78	0.51	0.96	0.78	0.51
Temperature recovery efficiency (%)	69	69	72	—	—	—
Enthalpy recovery efficiency (%)	Heating	62	62	65	—	—
	Cooling	44	44	48	—	—
Sound level (dB)	Measured at 59in. under the center of panel	39	37	31.5	40.5	39
	Air outlets	50.5	48.5	40.5	—	—
Starting current	Under 5.0A or less					
Insulation resistance	10MΩ or more (DC500V megger)					
Dielectric strength	AC 1500V 1 minute					

※Above specifications are for 230V, 60Hz.



Model LGH-F470RX3-E Characteristic Curve

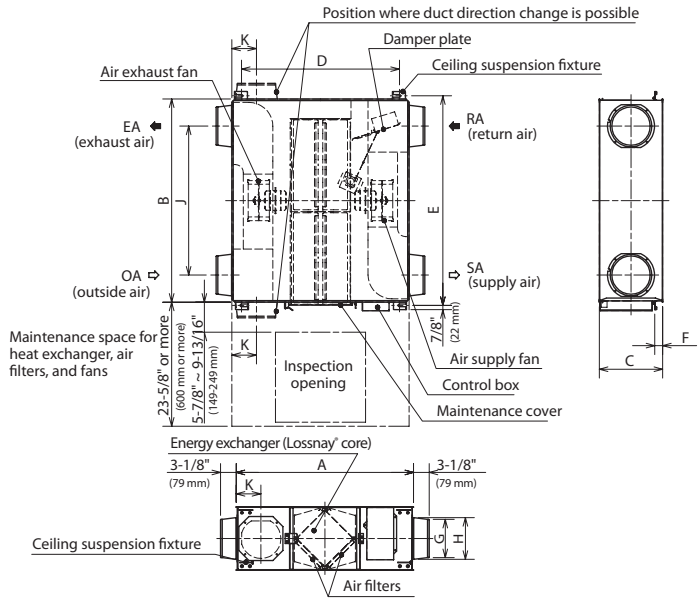


* Attention

1. The defrost mode must be operated at 14°F or below.
2. The current, power consumption, and efficiency are based on the above air flow rate.
3. The sound at the air outlets are the values at a 45° angle, 59 in. in front of the unit.
4. Fan speed can be switched between high and low.
The main unit switch must be used to select the extra-high fan speed.
5. Air conditions as per ARI standard 1060-2005.

*Specifications may be subject to change without notice.

Model LGH-F600RX3-E



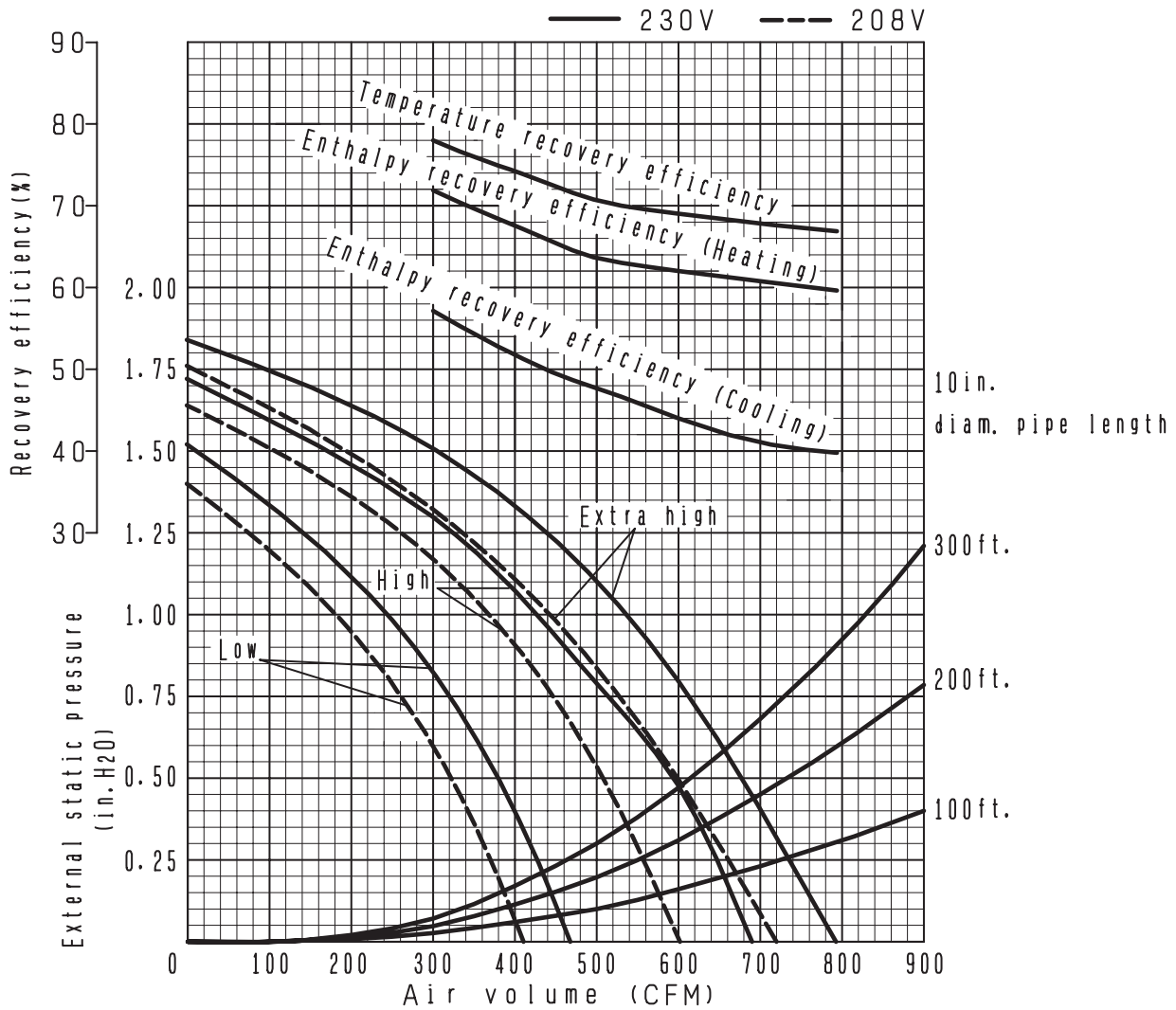
Unit	Dimensions			Ceiling suspension fixture pitch			Nominal diameter	Duct connecting flange		Duct pitch		Weight
	A	B	C	D	E	F		G	H	J	K	
inches	45-13/16	48-7/16	15-11/16	40-9/16	49-3/4	3/8	ø10	ø9-1/2	ø10-3/16	36-3/16	5-7/8	159 lb
mm	1164	1230	398	1030	1264	9.5	ø254	ø241	ø259	919	149	72 kg

Model LGH-F600RX3-E Specifications Table

Control signal	Serial single communication (M-NET transmission)						
Heat exchange system	Air-to-air total heat (sensible heat + latent heat) exchange						
Heat exchanger material	Partition, spacing plate-special treated paper						
Cladding	Galvanized steel sheet						
Heat insulating material	Self-extinguishing urethane foam						
Motor	Totally enclosed capacitor permanent split-phase induction motor, 4 poles, 2 units						
Blower	9 5/8 in. dia. centrifugal fan						
Supply air	5°F (※) to 104°F, RH 80% or less						
Operating environment	14°F to 104°F, RH 80% or less (General environment conditions for the Lossnay installation area)						
Functions	Lossnay ventilation/Bypass ventilation High(Extra high)-Low switching						
Weight	159 lbs						
Power supply	Single phase 208/230V 60Hz						
Ventilation mode	Lossnay ventilation			Bypass ventilation			
Fan speed	Extra high	High	Low	Extra high	High	Low	
Current (A)	2.9	2.6	1.7	2.8	2.6	1.7	
Power consumption (W)	654	600	390	648	600	396	
Air volume (CFM)	600	600	430	600	600	430	
External static pressure (in. H ₂ O)	0.80	0.48	0.24	0.80	0.48	0.24	
Temperature recovery efficiency (%)	69	70	75	—	—	—	
Enthalpy recovery efficiency (%)	Heating	62	63	69	—	—	
	Cooling	44	47	53	—	—	
Sound level (dB)	Measured at 59 in. under the center of panel	39	37	30	40	39	31
	Air outlets	47	45	37	48	45	37
Starting current	Under (7.0A) or less						
Insulation resistance	10MΩ or more (500V megger)						
Dielectric strength	AC 1500V 1 minute						

※Above specifications are for 230V, 60Hz.

Model LGH-F600RX3-E Characteristic Curve

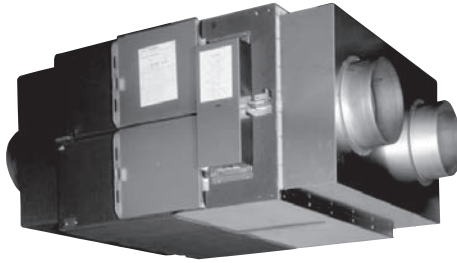


* Attention

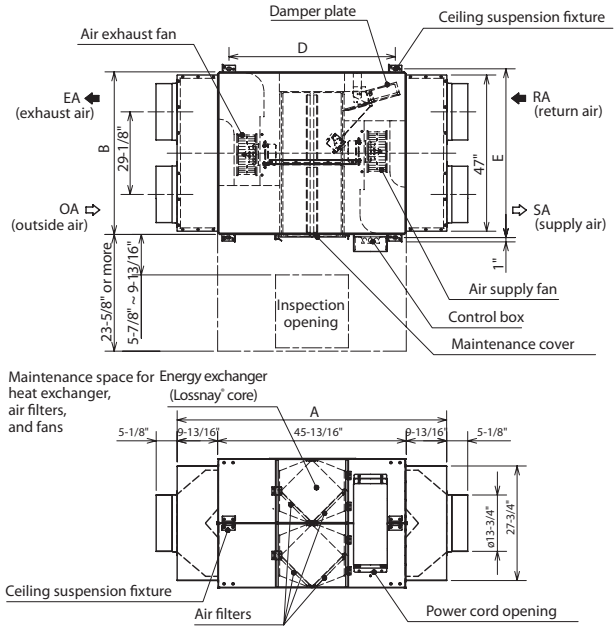
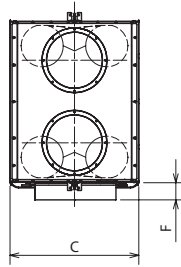
1. The defrost mode must be operated at 14°F or below.
2. The current, power consumption, and efficiency are based on the above air flow rate.
3. The sound at the air outlets are the values at a 45° angle, 59 in. in front of the unit.
4. Fan speed can be switched between high and low.
The main unit switch must be used to select the extra-high fan speed.
5. Air conditions as per ARI standard 1060-2005.

*Specifications may be subject to change without notice.

Model LGH-F1200RX3-E



LGH-F1200RX3-E has a double circuit board and requires two M-NET connections.



	Dimensions			Ceiling suspension fixture pitch			Nominal diameter	Duct connecting flange	Duct pitch	Weight
	A	B	C	D	E	F				
inches	65-7/16	48-7/16	31-1/2	40-9/16	50-1/8	8-3/4	ø14	ø13-3/4	29- 1/8	395 lb
mm	1164	1230	800	1030	1273	222	ø356	ø349	740	179 kg

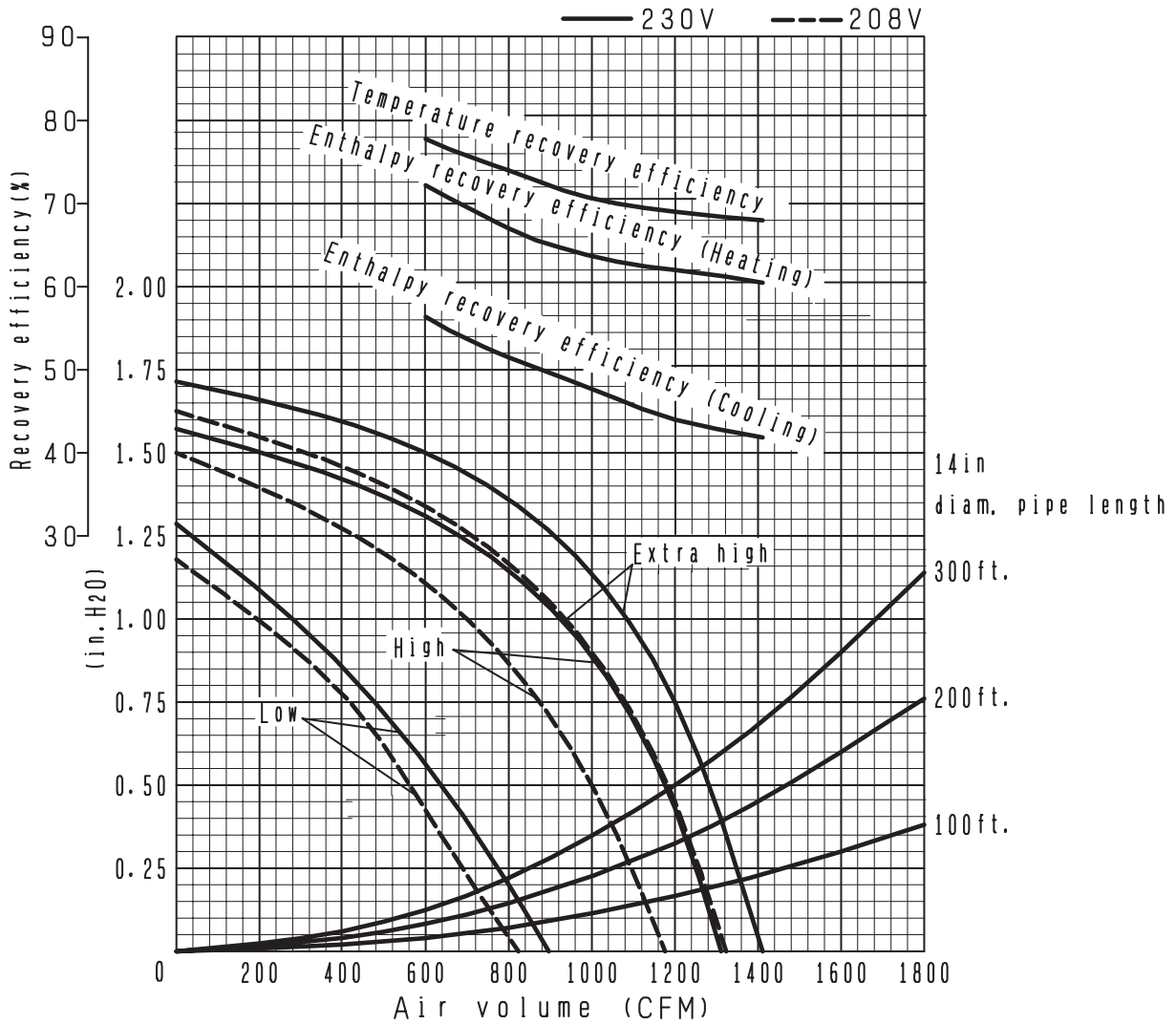
Model LGH-F1200RX3-E Specifications Table

Control signal	Serial single communication (M-NET transmission)--Two addresses required.					
Heat exchange system	Air-to-air total heat (sensible heat + latent heat) exchange					
Heat exchanger material	Partition, spacing plate-special treated paper					
Cladding	Galvanized steel sheet					
Heat insulating material	Self-extinguishing urethane foam					
Motor	Totally enclosed capacitor permanent split-phase induction motor, 4 poles, 4 units					
Blower	8 3/4in dia. centrifugal fan					
Supply air	5°F (※) to 104°F, RH 80% or less					
Operating environment	14°F to 104°F, RH 80% or less (General environment conditions for the Lossnay installation area)					
Functions	Lossnay ventilation/Bypass ventilation High(Extra high)-Low switching					
Weight	395lbs					
Power supply	Single phase 208/230V 60Hz					
Ventilation mode	Lossnay ventilation			Bypass ventilation		
Fan speed	Extra high	High	Low	Extra high	High	Low
Current (A)	5.7	5.6	3.6	5.6	5.5	3.6
Power consumption (W)	1290	1200	810	1265	1190	800
Air volume (CFM)	1200	1200	800	1200	1200	800
External static pressure (in. H ₂ O)	0.75	0.43	0.20	0.75	0.43	0.20
Temperature recovery efficiency (%)	69	70	76	-	-	-
Enthalpy recovery efficiency (%)	Heating	62	63	69	-	-
	Cooling	44	47	53	-	-
Sound level (dB)	Measured at 59in. under the center of panel	41	39	32	42	40
	Air outlets	52	49	41	52	49
Starting current	Under (14A) or less					
Insulation resistance	10MΩ or more (500V megger)					
Dielectric strength	AC 1500V 1 minute					

※Above specifications are for 230V, 60Hz.



Model LGH-F1200RX3-E Characteristic Curve



*** Attention**

1. The defrost mode must be operated at 14°F or below.
2. The current, power consumption, and efficiency are based on the above air flow rate.
3. The sound at the air outlets are the values at a 45° angle, 59 in. in front of the unit.
4. Fan speed can be switched between high and low.
The main unit switch must be used to select the extra-high fan speed.
5. Air conditions as per ARI standard 1060-2005.

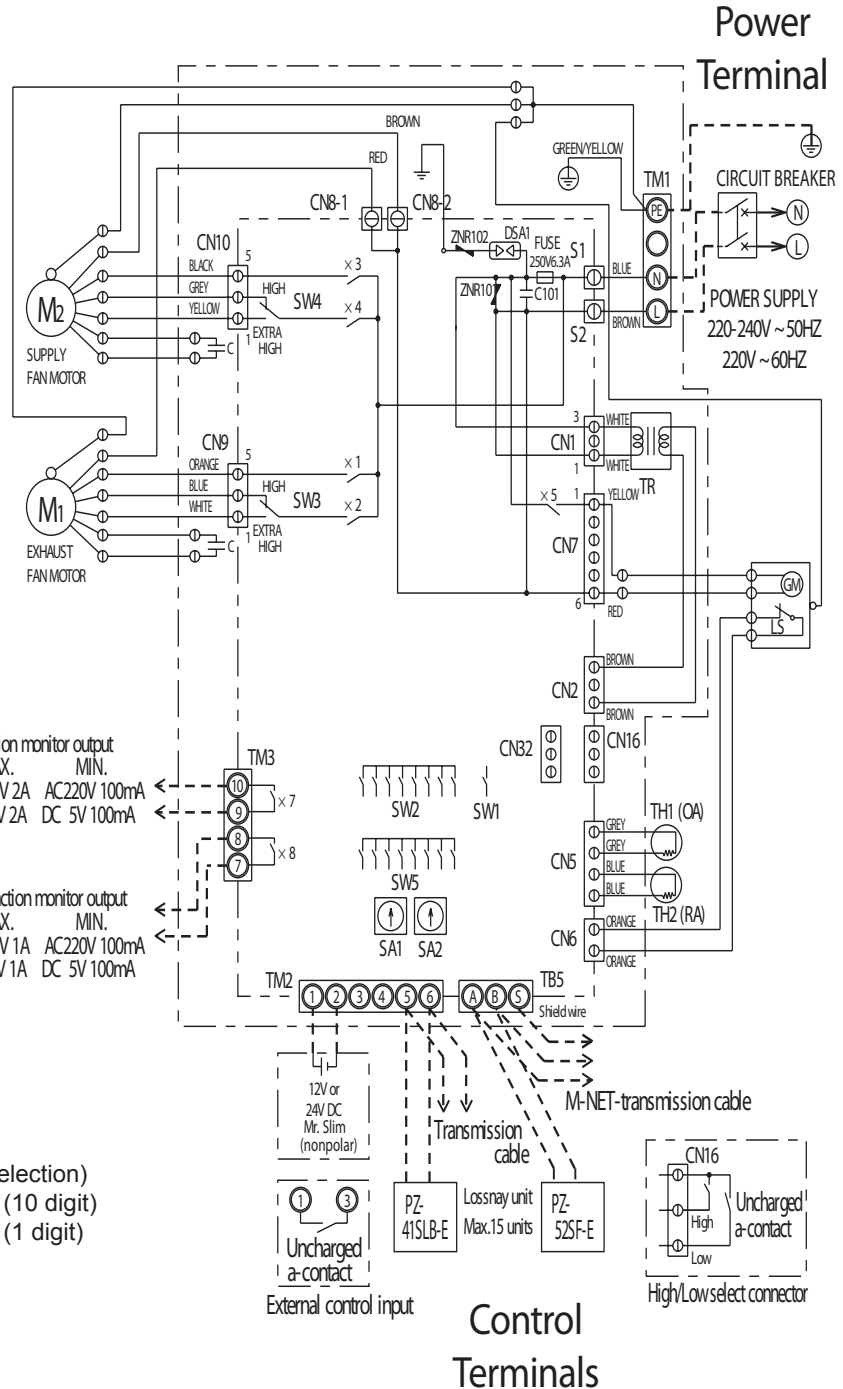
*Specifications may be subject to change without notice.

4. WIRING DIAGRAMS

LGH-F300RX3-E, -F470RX3-E, -F600RX3-E

- Dotted lines represent field-supplied wire.
- Be sure to connect the ground wire.
- Breaker should be provided by the customer.

- | | |
|--------|--|
| M1 | Motor for exhaust fan |
| M2 | Motor for supply fan |
| C | Capacitor |
| GM | Motor for bypass movement |
| LS | Microswitch |
| TH1 | Thermistor for outside air |
| TH2 | Thermistor for return air |
| SW1 | Switch (Main/Sub change) |
| SW2,5 | Switch (Function selection) |
| SW3 | High/X-High select switch (Exhaust fan) |
| SW4 | High/X-High select switch (Supply fan) |
| TM1 | Terminal block (Power supply) |
| TM2 | Terminal block (Transmission cable and external control input) |
| TM3 | Terminal block (Monitor output) |
| TB5 | Terminal block (M-NET Transmission cable) |
| S1, S2 | Connector (Power supply) |
| TR | Control circuit transformer |
| X7 | Relay contact (for operation monitor output) |
| X8 | Relay contact (for malfunction monitor output) |
| CN1 | Connector (Transformer primary) |
| CN2 | Connector (Transformer secondary) |
| CN5 | Connector (Thermistor) |
| CN6 | Connector (Microswitch) |
| CN7 | Connector (Motor for bypass operation) |
| CN8-1 | Tab connector (Fan motor) |
| CN8-2 | Tab connector (Fan motor) |
| CN9 | Connector (Fan motor) |
| CN10 | Connector (Fan motor) |
| CN16 | Connector (High/Low switch) |
| CN32 | Connector (Remote control selection) |
| SA1 | Address setting rotary switch (10 digit) |
| SA2 | Address setting rotary switch (1 digit) |
| LED1 | Inspection indicator lamp |
| LED2 | Inspection indicator lamp |
| LED4 | Power supply indicator lamp |
| LED6 | M-NET indicator lamp |
| MARK: | Indicates Terminal block
Connector
Board insertion connector or fastening connector of control board |



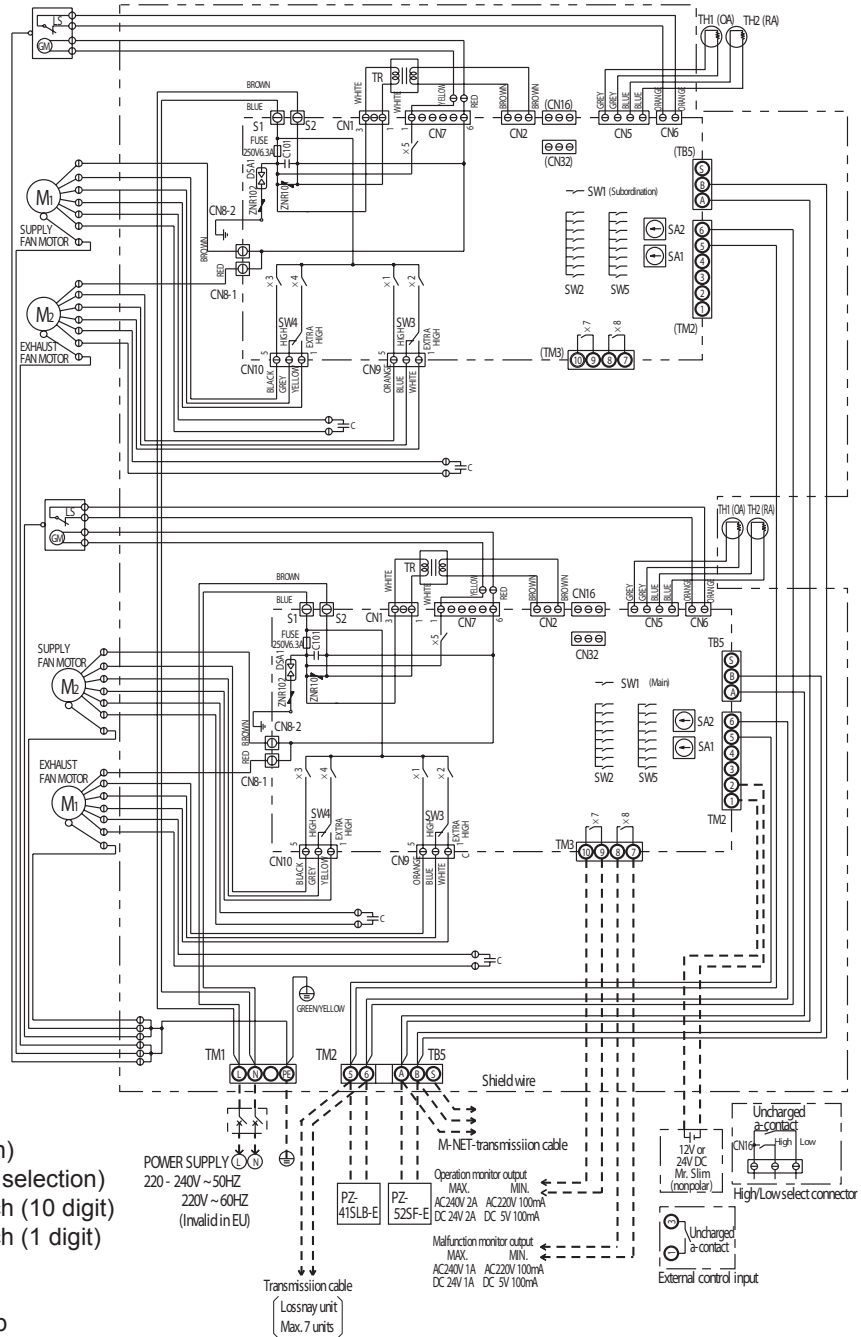
Note: CN16 is accessed using a PAC-715AD 3-wire connector.



LGH-F1200RX3-E

- Dotted lines represent field-supplied wire.
- Be sure to connect the ground wire.
- Breaker should be provided by the customer.

- M1 Motor for exhaust fan
 M2 Motor for supply fan
 C Capacitor
 GM Motor for bypass movement
 LS Microswitch
 TH1 Thermistor for outside air
 TH2 Thermistor for return air
 SW1 Switch (Main/Sub change)
 SW2,5 Switch (Function selection)
 SW3 High/X-High select switch (Exhaust fan)
 SW4 High/X-High select switch (Supply fan)
 TM1 Terminal block (Power supply)
 TM2 Terminal block (Transmission cable and external control input)
 TM3 Terminal block (Monitor output)
 TB5 Terminal block (M-NET Transmission cable)
 S1, S2 Connector (Power supply)
 TR Control circuit transformer
 X7 Relay contact (for operation monitor output)
 X8 Relay contact (for malfunction monitor output)
 CN1 Connector (Transformer primary)
 CN2 Connector (Transformer secondary)
 CN5 Connector (Thermistor)
 CN6 Connector (Microswitch)
 CN7 Connector (Motor for bypass operation)
 CN8-1 Tab connector (Fan motor)
 CN8-2 Tab connector (Fan motor)
 CN9 Connector (Fan motor)
 CN10 Connector (Fan motor)
 CN16 Connector (High/Low switch)
 CN32 Connector (Remote control selection)
 SA1 Address setting rotary switch (10 digit)
 SA2 Address setting rotary switch (1 digit)
 LED1 Inspection indicator lamp
 LED2 Inspection indicator lamp
 LED4 Power supply indicator lamp
 LED6 M-NET indicator lamp
- MARK: Indicates Terminal block
 Connector
 Board insertion connector or fastening connector of control board



Note: The double control board for the LGH-F1200RX has two M-NET addresses.

Note: CN16 is accessed using a PAC-715AD 3-wire connector—two required.

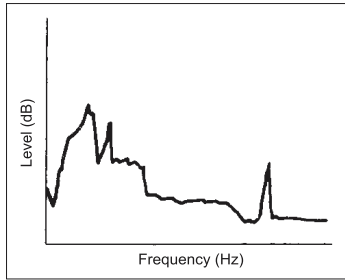


5. SOUND ANALYSIS

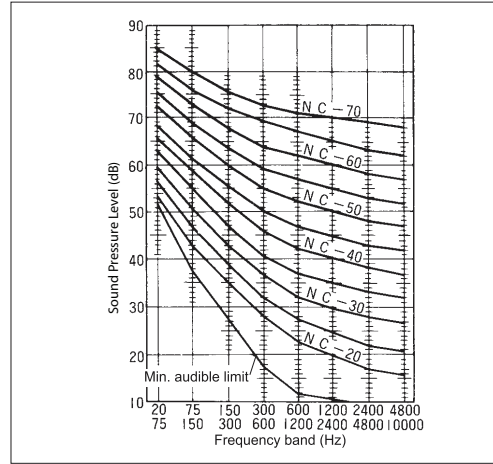
5.1. Sound Analysis

The human ear senses differently according to frequency. However, sound generated from a vibration is not limited to one frequency but instead various frequencies are generated at different levels. This is expressed by the NC curve, which is determined according to the difficulty of hearing a conversation. Even if the sound is a very low level, it is annoying if a specific frequency is emitted. These sounds are suppressed to a minimum during product design stages, but the sound may become very disturbing with resonance of the ceiling, wall, etc.

Example Continuous frequency analysis



NC curve

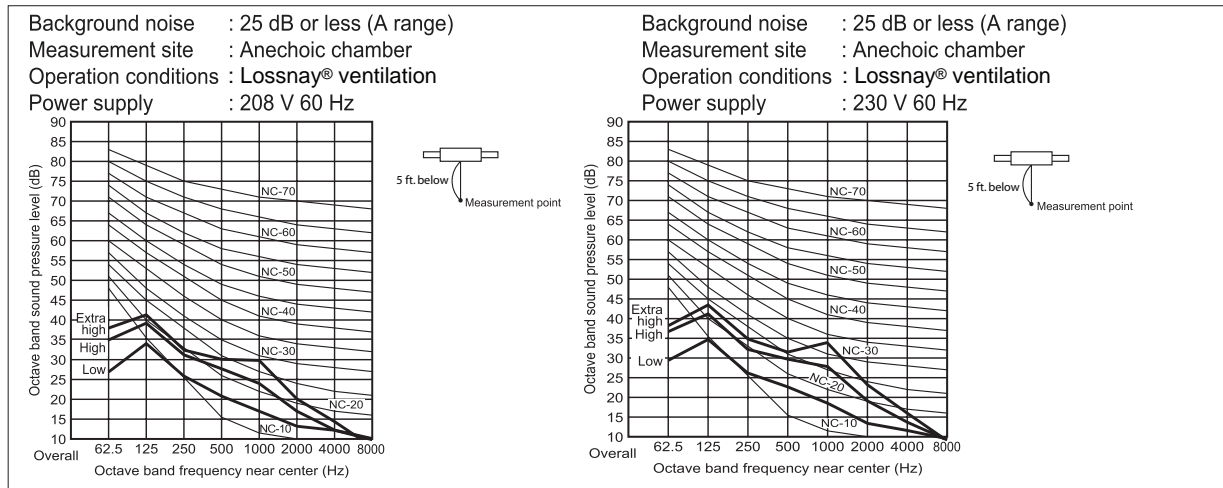


● Tolerable noise levels and NC values according to room application

Room application	dB	NC value	Room application	dB	NC value
Broadcasting studio	25	15 - 20	Cinema	40	30
Music hall	30	20	Hospital	35	30
Theatre (approx. 500 seats)	35	20 - 25	Library	40	30
Classroom	40	25	Small office	45	30 - 35
Conference room	40	25	Restaurant	50	45
Apartment	40	25 - 30	Gymnasium	55	50
Hotel	40	25 - 30	Large conference room	50	45
Housing (room)	40	25 - 30	Factory	70	50 or more

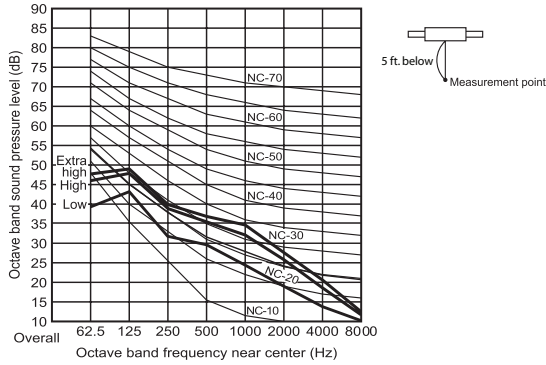
5.2. LGH-F-RX3-E NC Curves

LGH-F300RX₃

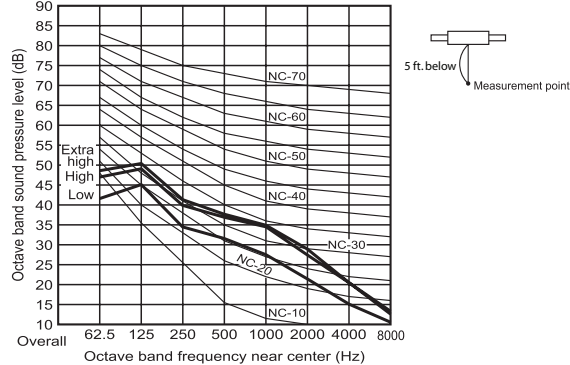


LGH-F470RX₃

Background noise : 25 dB or less (A range)
 Measurement site : Anechoic chamber
 Operation conditions : Lossnay® ventilation
 Power supply : 208 V 60 Hz

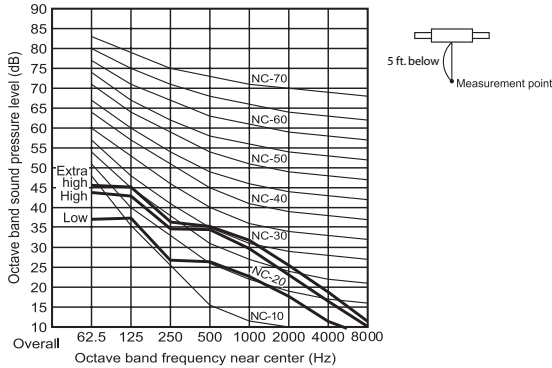


Background noise : 25 dB or less (A range)
 Measurement site : Anechoic chamber
 Operation conditions : Lossnay® ventilation
 Power supply : 230 V 60 Hz

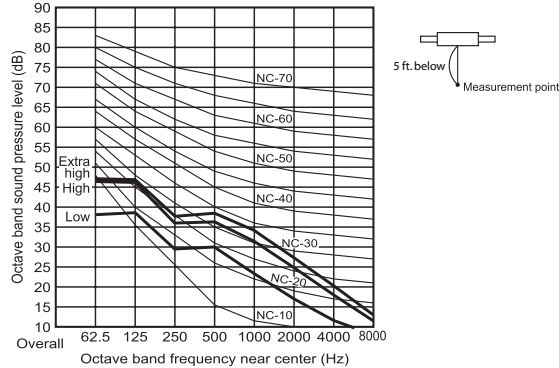


LGH-F600RX₃

Background noise : 25 dB or less (A range)
 Measurement site : Anechoic chamber
 Operation conditions : Lossnay® ventilation
 Power supply : 208 V 60 Hz

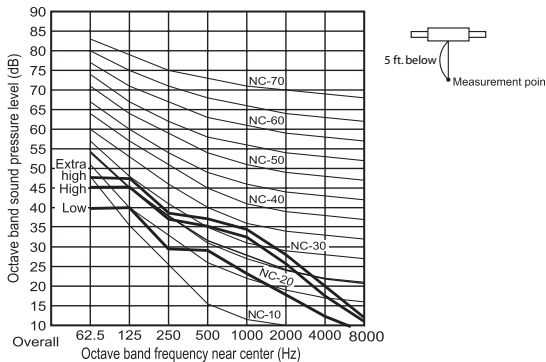


Background noise : 25 dB or less (A range)
 Measurement site : Anechoic chamber
 Operation conditions : Lossnay® ventilation
 Power supply : 230 V 60 Hz

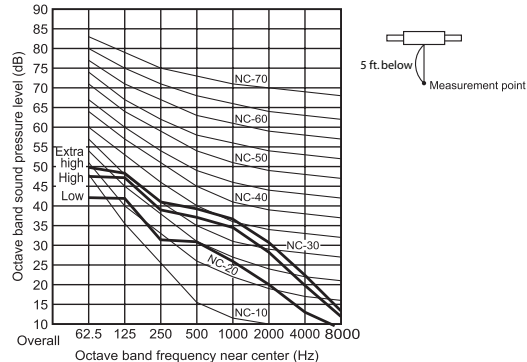


LGH-F1200RX₃

Background noise : 25 dB or less (A range)
 Measurement site : Anechoic chamber
 Operation conditions : Lossnay® ventilation
 Power supply : 208 V 60 Hz

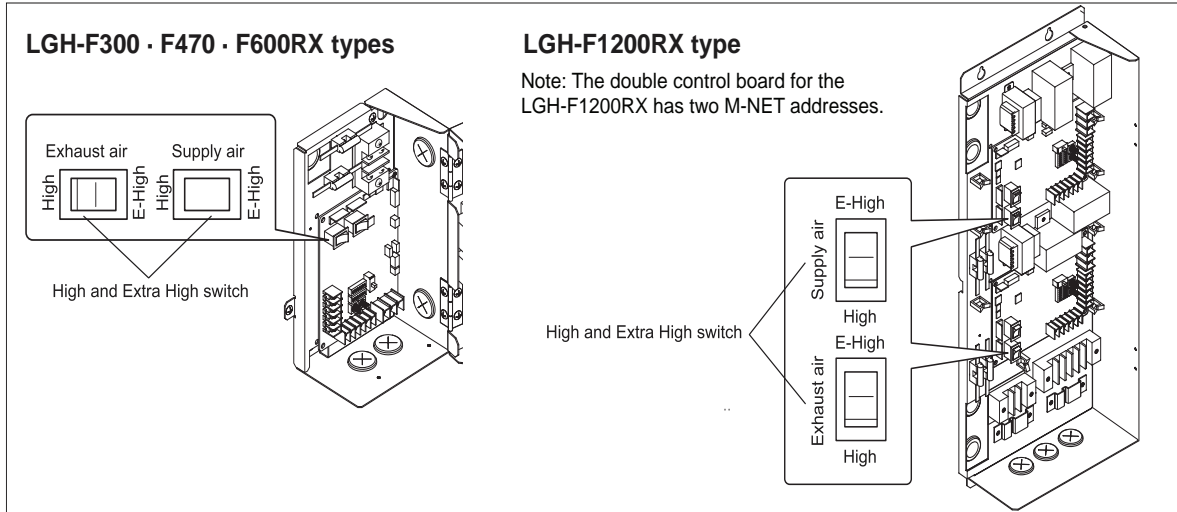


Background noise : 25 dB or less (A range)
 Measurement site : Anechoic chamber
 Operation conditions : Lossnay® ventilation
 Power supply : 230 V 60 Hz



6. FAN SPEED CONTROL CONSIDERATIONS

- (1) The ceiling embedded type: 300, 470, 600 and 1200 CFM types are available. Select an adequate model according to the room size and air volume for the application and sound levels.
- (2) LGH units are supplied with two speed blowers. Speeds are "LOW" and either "HIGH" or "EXTRA HIGH" as selected. All types have an extra-high speed. This setting is for a long duct run or when a large air volume is required. The positive and negative pressures of the room can also be adjusted with dampers.
- (3) The units have a low-sound design, however, for further sound reduction a silencer-type supply/return grille for supply/return air in the room, a silencer box for reducing air sound into the room, and a flexible silencer should be used.

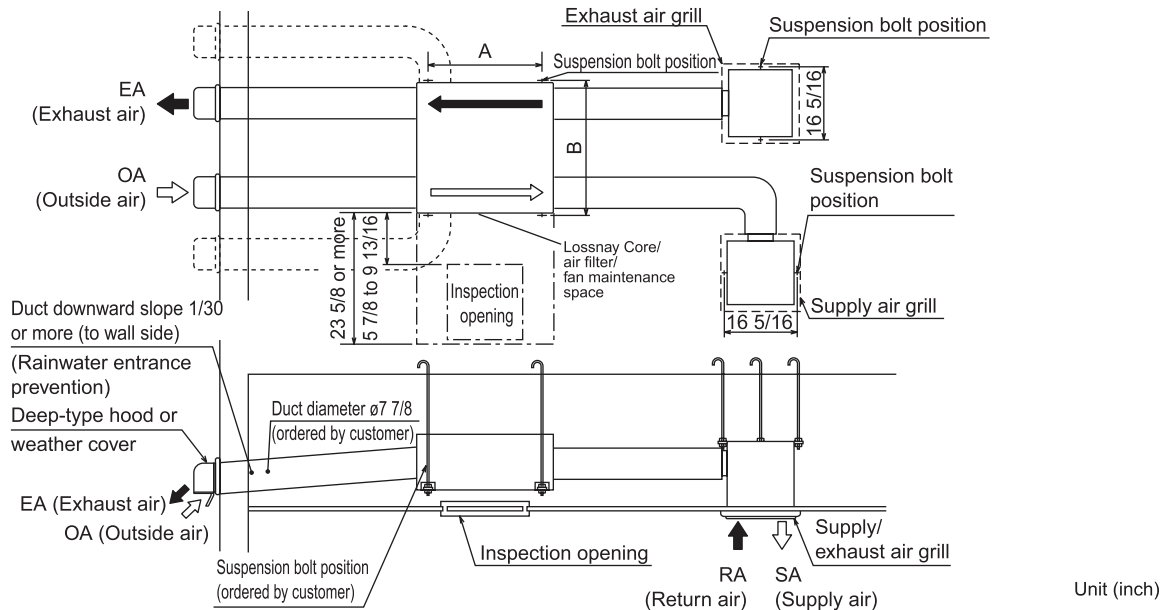


7. INSTALLATION

7.1. Installation Diagrams

LGH- F300 · F470 · F600RX models

Installation diagram

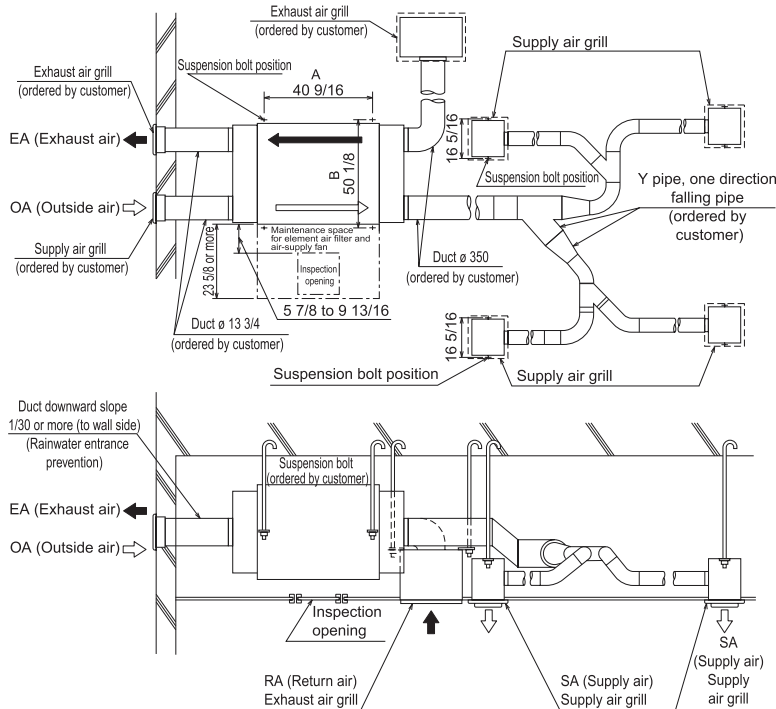


- Always leave inspection holes ($\varnothing 17 \frac{11}{16}$ or $\varnothing 23 \frac{5}{8}$) on the air filter and Lossnay® Core removal side.
- Always insulate the two ducts leading outside the building (intake air and exhaust air ducts) to prevent condensation.
- It is possible to change the direction of the outside air ducts (OA and EA side).
- It is possible to attach a suspension bolt.
- Do not install the vent cap or round hood where it will come into direct contact with rain water.

Air volume (CFM)	Model	Dimensions	
		A	B
300	LGH-F300RX type	31 1/8	41 1/4
470	LGH-F470RX type	40 9/16	40 13/16
600	LGH-F600RX type	40 9/16	49 3/4

LGH- F1200RX model

Installation diagram



- Always leave inspection holes (ϕ 17 11/16 or ϕ 23 5/8) on the air filter and Lossnay® Core removal side.
- Always insulate the two ducts leading outside the building (intake air and exhaust air ducts) to prevent condensation.
- If necessary, order a weather cover to prevent rain water from direct contact or entering the unit.

Air volume (CFM)	Model	Dimensions	
		A	B
1200	LGH-F1200RX type	40 9/16	50 1/8

7.2. Alternate Installation for Lossnay®

Top/bottom reverse installation

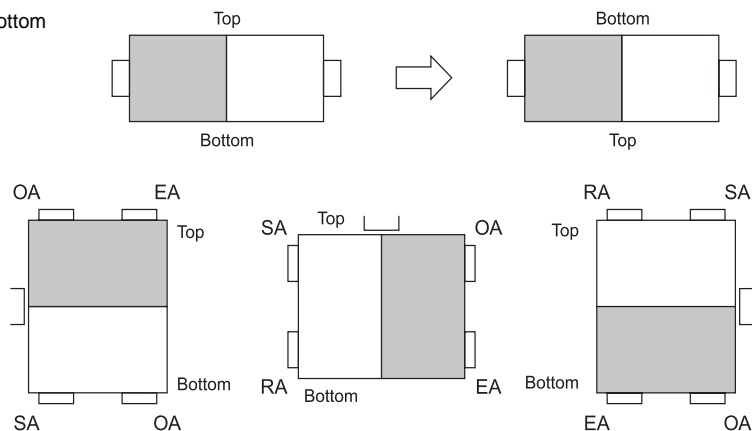
All LGH-RX models can be installed in top/bottom reverse.

Vertical installation patterns

Vertical installation is possible, but the installation pattern is limited for some models. Refer to the examples shown for installation patterns.

Special Note

The LGH-RX model was originally designed for being embedded in the ceiling. Vertical installation is not normally desirable for installation and maintenance.



Precautions

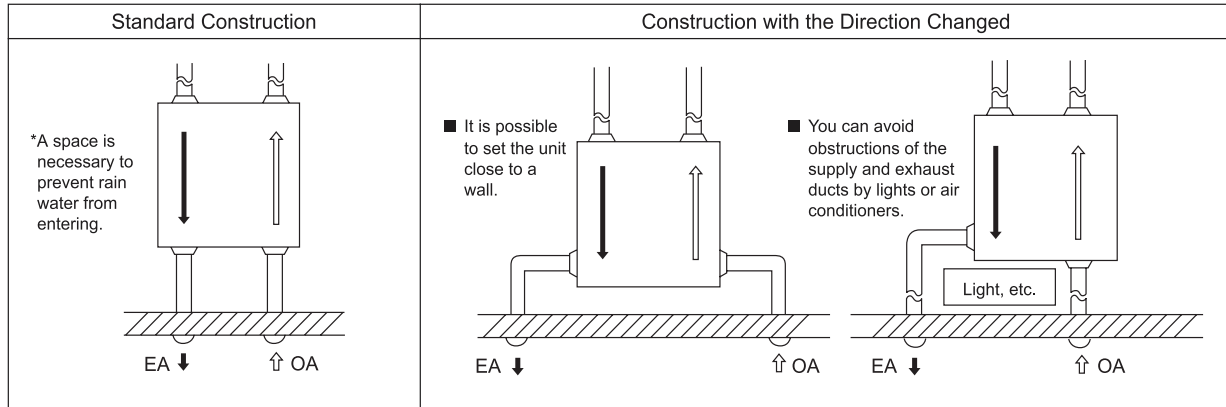
- When constructing for vertical installation, make sure that rain water will not enter the Lossnay® unit from outdoors.
- Always transport the unit in the specified state. Vertical installation applies only to after installation, and does not apply to transportation. (The motor may be damaged if the unit is transported vertically.)

Slanted installation

Slanted installation is not recommended.

7.3. Selecting Duct Attachment Direction

Choose between two directions for the outside duct (OA, EA) piping direction for optimum installation.



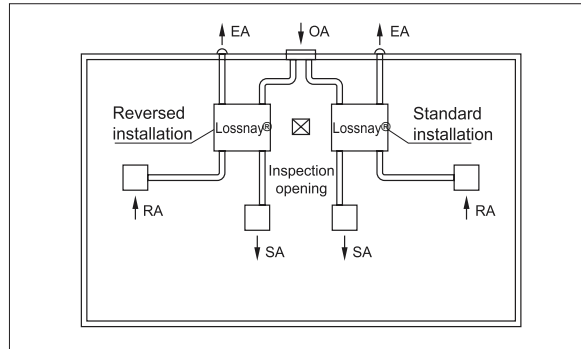
Installation and maintenance

- (1) Always leave an inspection hole (\varnothing 17 11/16) on the filter and Lossnay® Core removal side.
- (2) Always insulate the two ducts outside the room (intake air and exhaust air ducts) to prevent condensation.
- (3) Enforce measures to prevent rain water from entering.
 - Apply a slope of 1/30 or more towards the wall to the two ducts outside the room (intake air and exhaust air ducts).
 - Do not install the vent cap or round hood where it will come into direct contact with rain water.
- (4) Use the optional “control switch” (Ex. PZ-41SLB, etc.) for the RX-type.
A centralized controller can also be used.

Installation applications

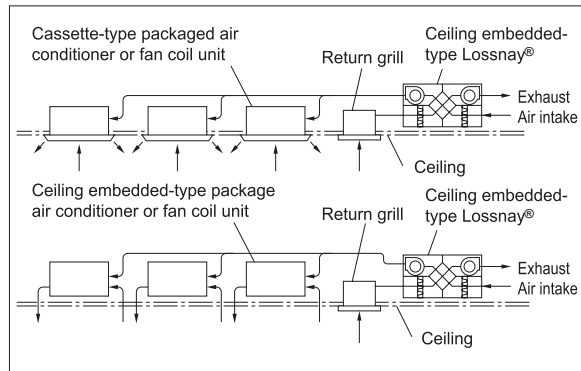
(1) Combined installation of two units

The main unit's supply outlet and suction inlet and the room side and outdoor side positions cannot be changed. However, the unit can be turned over, and installed as shown below. (This is applicable when installing two units in one classroom, etc.)



(2) System operation with air conditioner

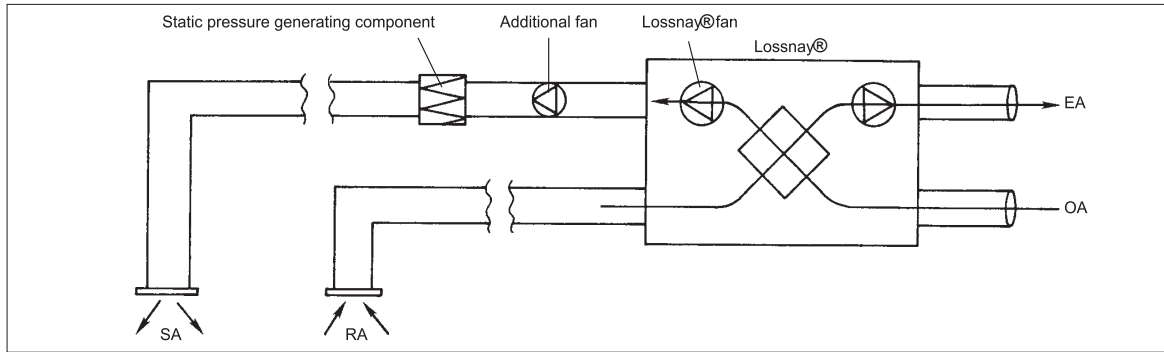
Air conditioning systems with independent dispersed multiple unit air-conditioners are increasing due to merits such as improved controllability, energy conservation and space saving. For these types of air conditioning systems, combined operation of the dispersed air conditioners with the Lossnay®, is possible.



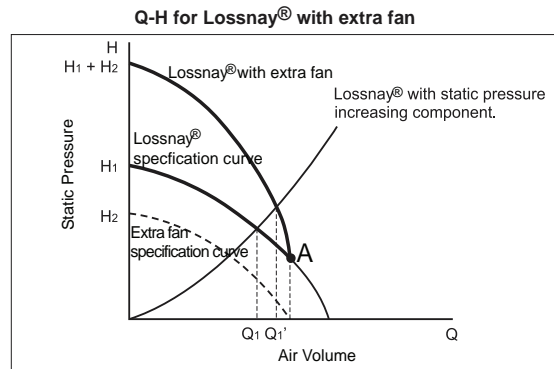
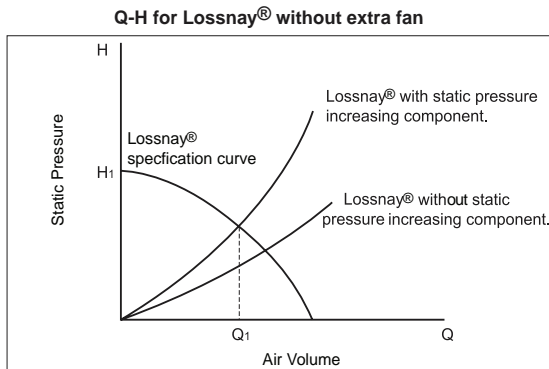
Performance Certified to ARI 1060 Standard

7.4. Installation of Supplementary Fan Devices After Lossnay® Unit

On occasions it may be necessary to install additional fans in the ductwork following the LGH type Lossnay®. This is because of the inclusion of extra components such as control dampers, high-efficiency filters, sound attenuators, etc. which create a significant extra static pressure to the airflow. An example of such an installation is shown below.



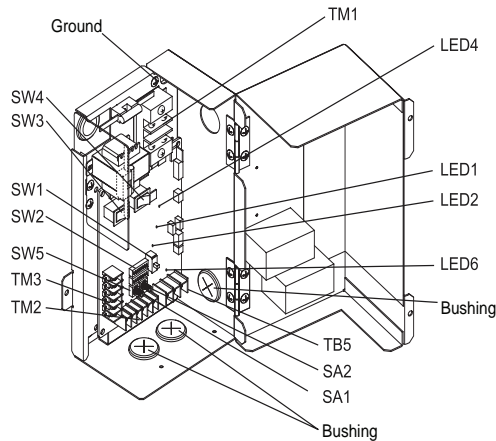
For such an installation care should be taken to avoid undue stress on the fan motors. Referring to the diagrams below, Lossnay® with extra fan should be used at the point of left side from A. (See chart, bottom right.)



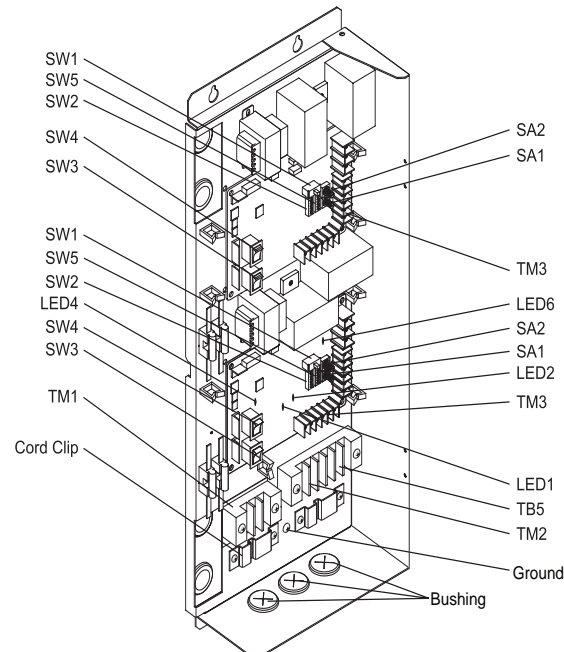
8. ELECTRICAL INSTALLATION

With this product, the wiring installation method will vary according to the design of the system. Perform electrical installation for each of the required sections. Observe local codes and the National Electric Code directives.

Names of components in control box LGH-F300, F470 and LGH-F600RX



LGH-F1200RX



Basic System – Stand-alone Lossnay® ERV with PZ-41SLB-E Remote Controller

<p>One Lossnay® with one remote controller</p> <p>One Lossnay® unit is operated independently with one remote controller.</p>	<p>Multiple Lossnay® units with one remote controller</p> <p>Up to 15 Lossnay® units can be controlled at one time with one remote controller.</p>	<p>Two remote controller system with one Lossnay®</p> <p>The Lossnay® can be controlled from two remote locations. The remote controller gives priority to the last touch.</p>
---	--	--

Operation with Mr. Slim®

<p>Operating with Mr. Slim® (A-control) - Interlocked</p> <p>The Remote controller (A-control) controls the air conditioning device and the Lossnay®. It is possible to operate or switch fan speed for the Lossnay® individually.</p>	<p>Operating with external device</p> <p>The operation of the Lossnay® will be connected with the operation or stopping of the external device. Input of level signal or pulse signal (12V DC, 24V DC, uncharged a-contact) is possible.</p>
--	--

CITY MULTI® and Lossnay® Interlocked

M-NET SYSTEM

Air conditioning device and system control

It is possible to operate 16 indoor units per 1 Lossnay®

Centralized Management System

Control of start/stop, fan speed and ventilation mode is possible from the Lossnay® M-NET remote controller PZ-52SF-E

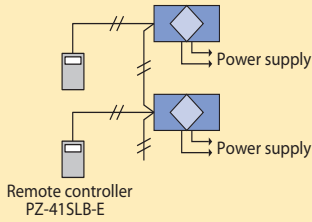
Control of start/stop, fan speed and ventilation mode is possible from the centralized controller.

It is possible to set a maximum of 16 units for 1 group.

Note: In the LGH-F1200RX type, there are two circuit boards installed in each unit, so count each unit as two Lossnay® units.



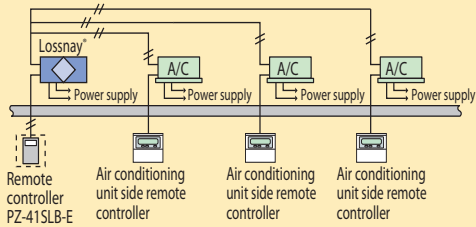
Two remote controller system with multiple Lossnay units



It is also possible to operate two remote controller units when using multiple Lossnay[®] units.

Interlocking multiple units

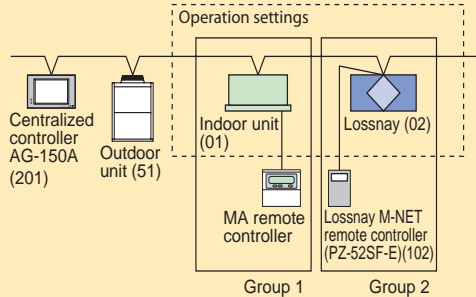
When the operation signal is an uncharged a-contact signal



Interlocking is possible from multiple air conditioning units, etc. (excluding pulse input)
(Separately sold parts are necessary depending on the operation signal).

Interlocking/individual joint systems

By making the group setting, interlock settings have become possible. (Joint use of the CITY MULTI[®] remote controller and Lossnay remote controller is possible.)



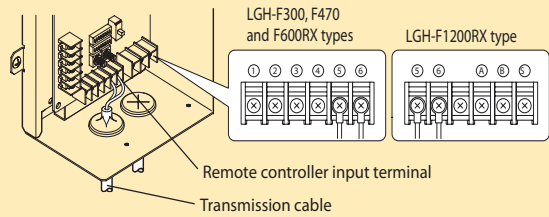
() address

Applicable indoor units use MA remote controller models.
Do not set the air conditioning unit and Lossnay[®] unit to be part of the same group.

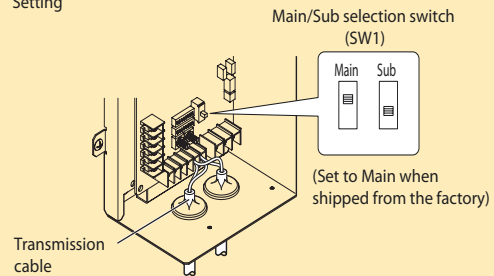
Use Lossnay[®] remote controller PZ-41SLB-E

(Do not use PZ-52SF-E).

Lossnay[®] transmission connection terminal



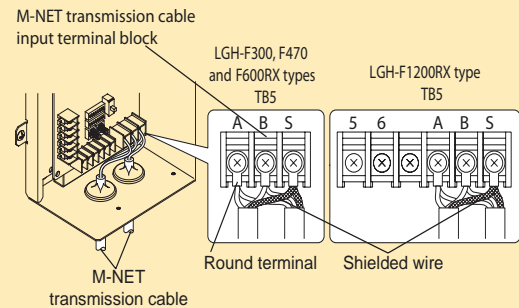
Setting



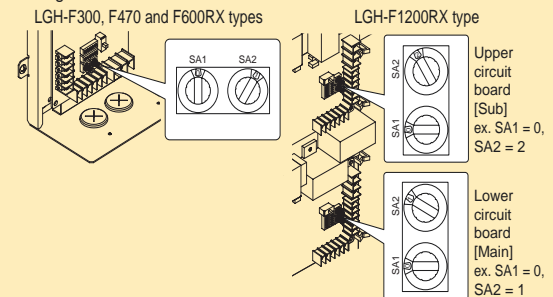
Use Lossnay[®] M-NET remote controller PZ-52SF-E.

(Do not use PZ-41SLB-E).

Lossnay[®] transmission connection terminal



Setting



When the address number has been changed, the data in the memory is automatically reset.

System Selection

Interlocked with CITY MULTI®

○ Available
× Not available

Lossnay operation when indoor unit is stopped	○
Lossnay stopping when indoor unit is operating	○
Selecting Lossnay fan speed	
When interlocked with indoor unit for compatibility with R22, R407C and R410A	High/Low
Ventilation mode	○*1
Filter maintenance indicator	○
Lossnay error indicator	○
Delayed operation - selectable times	○
External control operating mode selection	×
Number of indoor units for interlocked group setting with one Lossnay unit	16 units
Number of Lossnay units for interlocked group setting with one indoor unit	1 unit

*1 Ventilation mode (Energy Recovery, Bypass, Auto) selectable from Centralized Controller, but not selectable from remote controller.

Interlocked with Mr. Slim®

When using A-control remote controller	
Lossnay operation when indoor unit is stopped	○
Lossnay stopping when indoor unit is operating	×
Lossnay fan speed selection	High/Low
Other common items	
Lossnay error indicator	×
Ventilation mode	Fixed to automatic
Filter maintenance indicator	×
Delayed operation - selectable times	○
External control operating mode selection	×
Number of indoor units for interlocked group setting with one Lossnay unit	1 unit
Number of Lossnay units for interlocked group setting with one indoor unit	1 unit

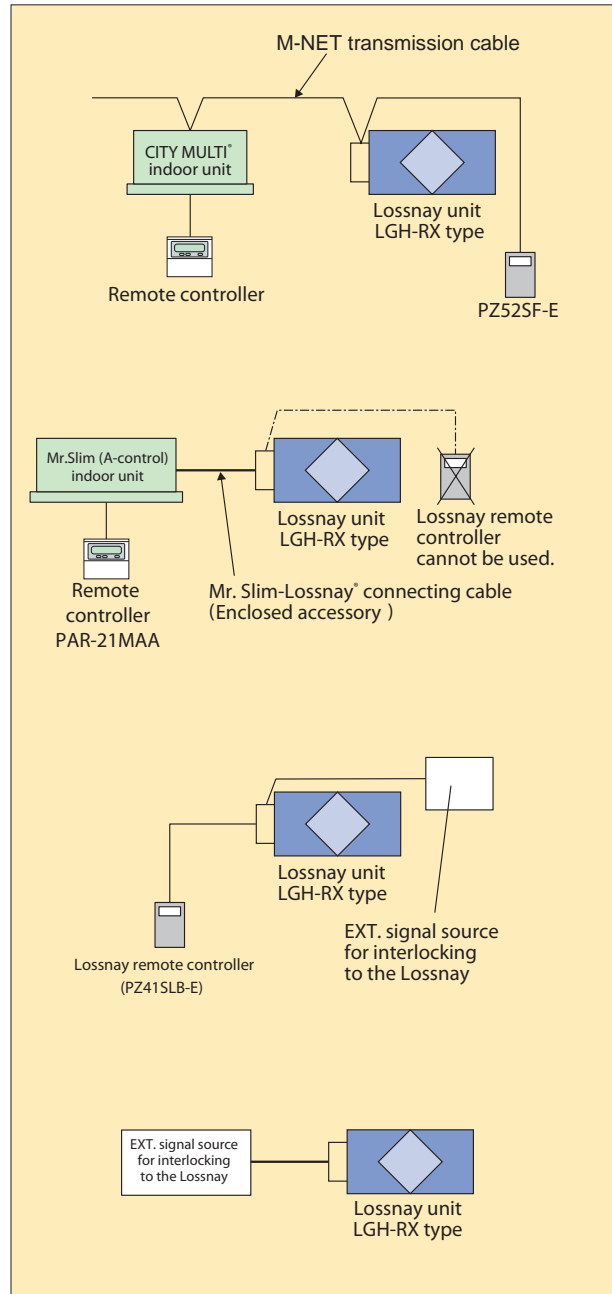
Independent Lossnay® Unit

(not interlocked with CITY MULTI® or Mr. Slim® systems)

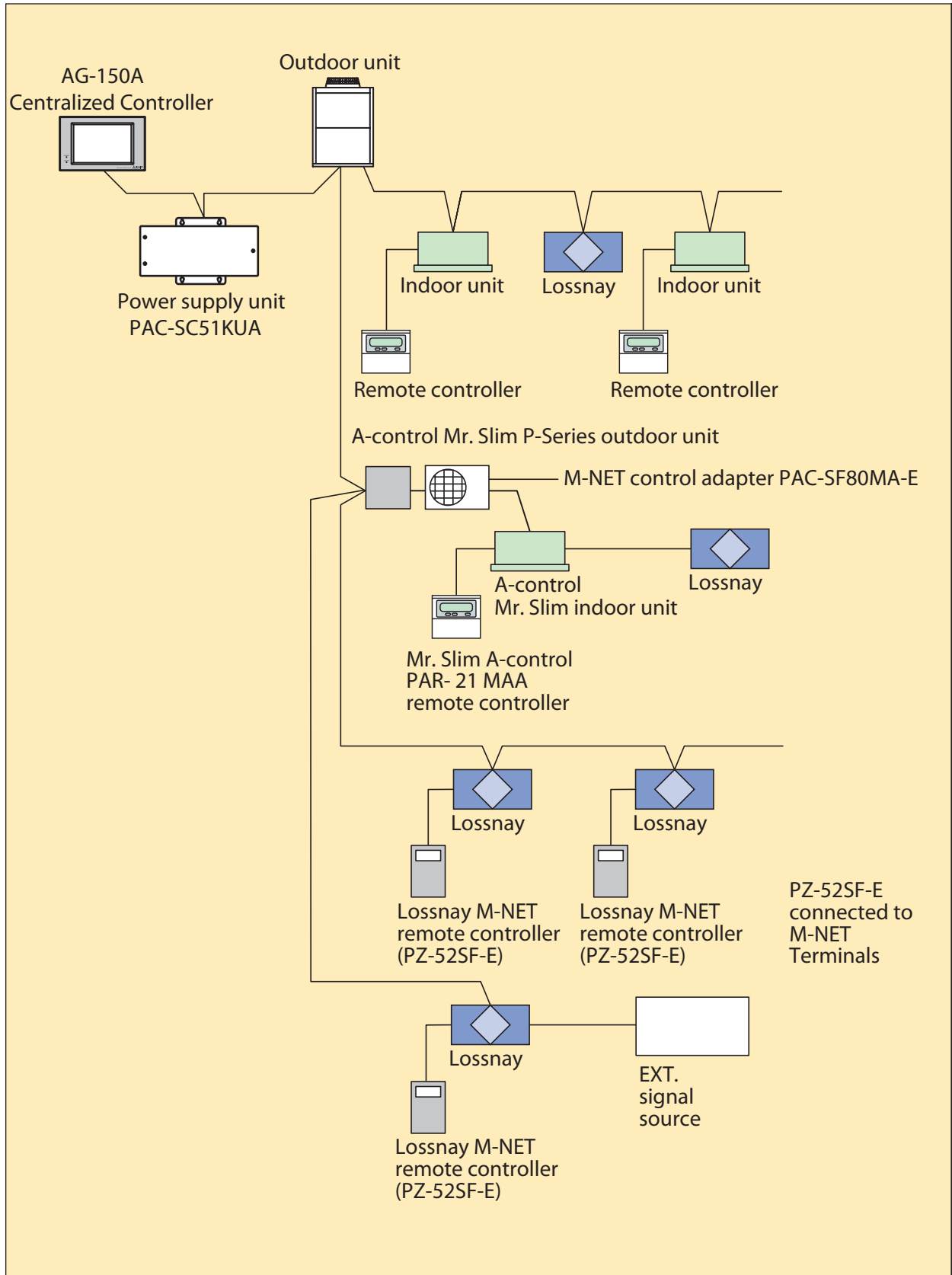
Start/Stop	○
Fan speed selection	High/Low
Ventilation mode	Energy Recovery By-pass/ Auto
Filter maintenance indicator	○
Lossnay error indicator	○
Delayed operation	○
External control operating mode selection	○
Number of Lossnay units (In the case of LGH-200RX type, count each unit as two for calculation)	15 units
Number of remote controllers	2 units

Interlocked with external device

Start/Stop	○
Fan speed selection	Fixed to high
Ventilation mode switching	Fixed to automatic
Filter maintenance indicator	×
Lossnay error indicator	×
Delayed operation	○
External control operating mode selection	○



Centralized Control System with CITY MULTI®

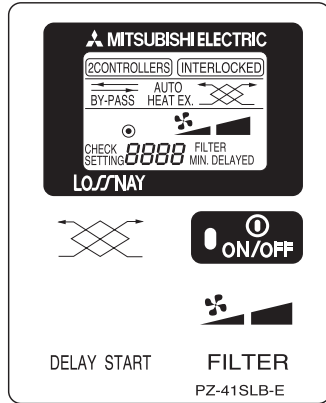


Refer to the technical documentation related to the Remote controller for the indoor unit.

Remote controllers for Lossnay® unit

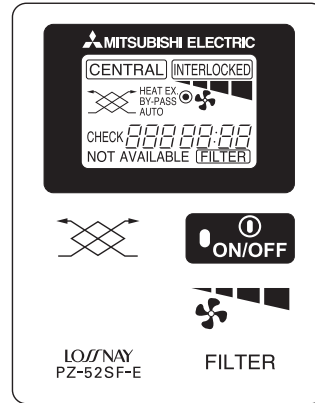
Lossnay® remote controller (PZ-41SLB-E)

With Lossnay® interlock switches and indicators.



Lossnay® M-NET remote controller (PZ-52SF-E)

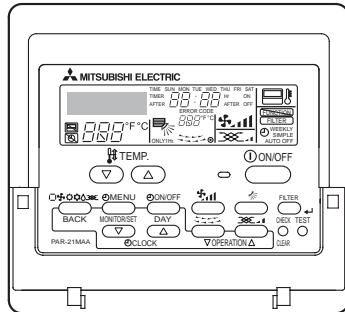
Without Lossnay® interlock switches and indicators.



Remote controllers for CITY MULTI® indoor unit

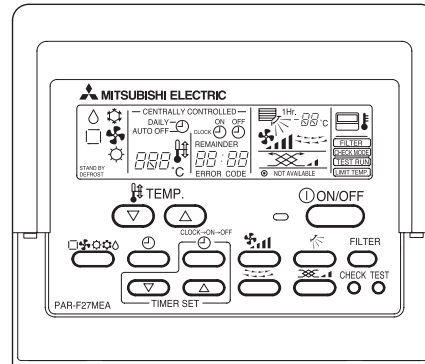
MA remote controller (non M-NET protocol) PAR-21MAA

With Lossnay® interlock switches and indicators.



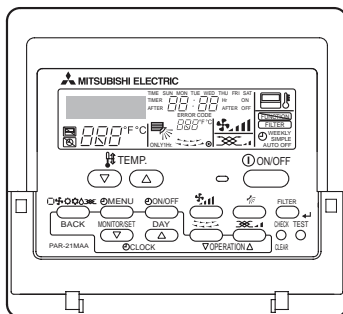
ME remote controller (PAR-F27MEA)

Without Lossnay® interlock switches and indicators.



Remote controllers for Mr. Slim® indoor unit

PAR-21MAA



Possible System Configurations

- (1) When using only the Lossnay® remote controller.
- (2) Linking Lossnay® and CITY MULTI® units.
- (3) Linking Mr. Slim® (A-control).
- (4) Linking with external equipment.

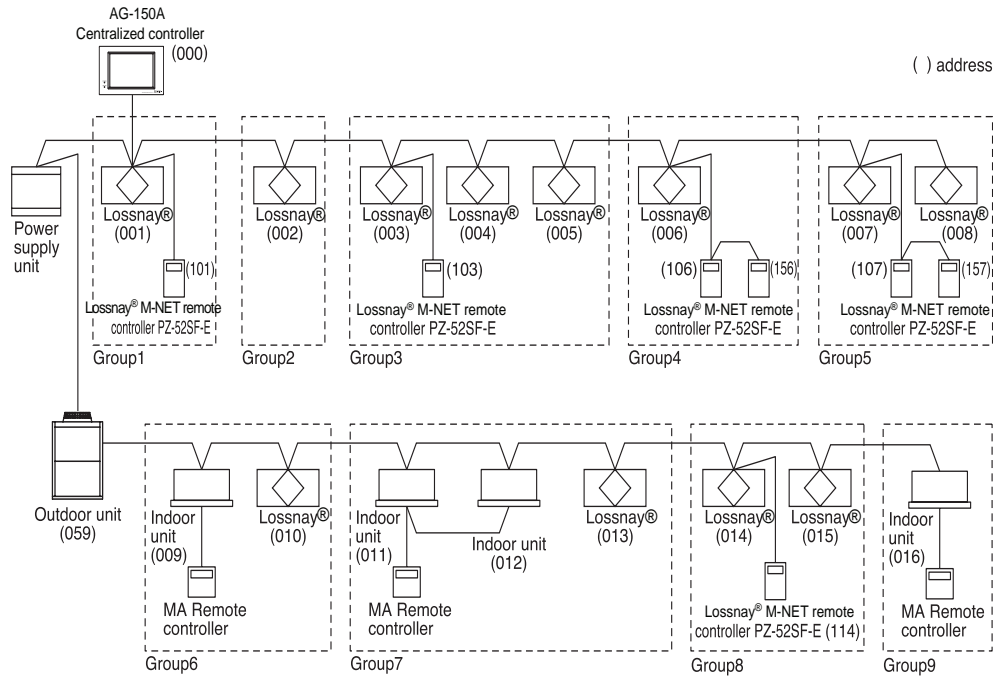
- General Features of the Lossnay® Remote Controller
It can start and stop the unit, change fan speed, switch the ventilation mode. It also includes indicators that show errors and when filter maintenance is required. When using M-NET transmission to operate from centralized control, use PZ-52SF-E.
- Lossnay® Remote Controller (PZ-41SLB-E)
Use when operating from 1 to 15 Lossnay® units at the same time.
- Lossnay® M-NET Remote Controller (PZ-52SF-E)
It can be used on the M-NET with CITY MULTI®. Since this remote controller is supplied power from the M-NET transmission line, it cannot be linked with Mr. Slim® and other such systems that do not use M-NET.

Please refer to the technical documentation for the other systems: CITY MULTI® and Mr. Slim®.

Combination with CITY MULTI® --Independent Lossnay® System with Lossnay® M-NET Remote Controller and M-NET

System Examples: 1

The following groups can be configured.



- Group 1 : Group of 1 Lossnay® unit and 1 Lossnay® M-NET remote controller.
- Group 2 : Group without Lossnay® M-NET remote controller.
- Group 3 : Group of multiple Lossnay® units and 1 Lossnay® M-NET remote controller.
- Group 4 : Group of 1 Lossnay® unit and 2 Lossnay® M-NET remote controllers.
- Group 5 : Group of multiple Lossnay® units and 2 Lossnay® M-NET remote controllers.
- Group 6 : Group of 1 indoor unit and 1 Lossnay® unit in interlocked operation.
- Group 7 : Group of multiple indoor units and 1 Lossnay® unit in interlocked operation.
- Group 8 : Group of multiple Lossnay® units connected to 1 indoor unit transmission cable and 1 Lossnay® M-NET remote controller.
- Group 9 : Group with no Lossnay® units.

Caution:

- Lossnay® remote controller PZ-41SLB-E cannot be used in conjunction with M-NET.

Lossnay® Function Table (Group Setting)

Item	Details
Number of Lossnay® remote controllers that can be connected to one Lossnay® unit.	2 units max.
Operation of 2 remote controllers in 1 group	Possible
Fan speed switching	High/Low
Ventilation mode	Heat exchanger / Bypass / Automatic
Filter indicator	3000 hours / 1500 hours / 4500 hours / No display
Error	Display

Controller Function Table

Model		Local Remote			Centralized controller
		Lossnay® M-NET remote controller	ME remote controller	MA remote controller	
		PZ-52SF-E	PAR-F27MEA	PAR-21MAA	AG-150A
No. of controllable (Groups/Units)		1 Group/ 16 Units	Not used to control non-interlocked Lossnay®		50 Groups/ 50 Units
Operation	Start/Stop	○			⊙
	Fan speed switching	○			⊙
	Ventilation mode switching	○			⊙
	Priority instructions. Local permitted/prohibited	×			⊙
Monitoring	Status (Operation/Stop)	○			○
	Fan speed switching	○			○
	Ventilation mode	○			○
	Error	○			○
	Error content	○			○
	Filter sign	○			○
	Local permitted/prohibited	○			○
Scheduling/ Recording	Weekly	×			○
	Stop/Starts per day	×			24
	Stop/Starts per week	×			24 x 7
	Minimum setting (minutes)	×			1
	Error record	×			○

Switches and display ⊙ : Group/batch ○ : Group only (or function available) × : Not available

CITY MULTI® and Lossnay® Interlocked System

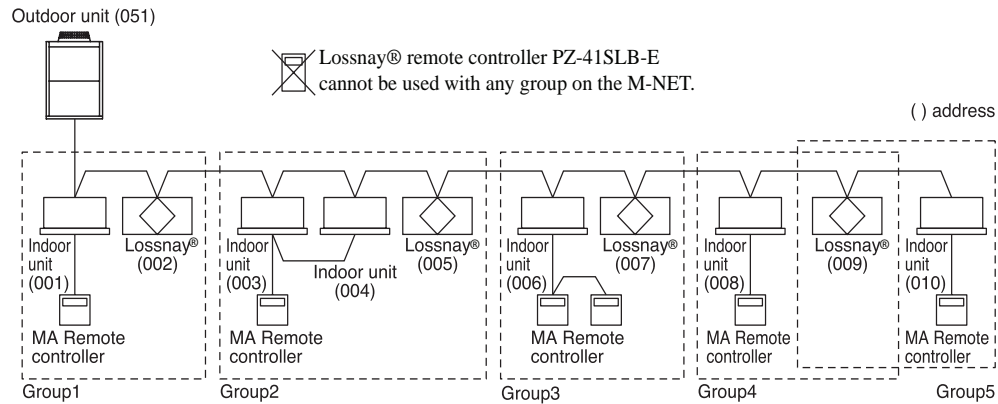
Characteristics

- Interlocked operation with Mitsubishi air-conditioners is possible.
- Can also perform independent Lossnay® operations using MA remote controller or ME remote controller.

System Examples

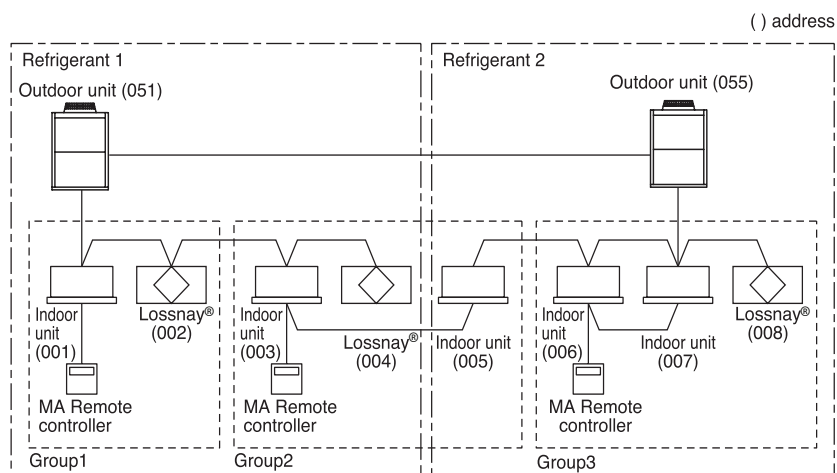
The following groups can be configured.

Single Refrigerant System



- Group 1 : Group of 1 indoor unit and 1 Lossnay® unit in interlocked operation.
 Group 2 : Group of multiple indoor units and 1 Lossnay® unit in interlocked operation.
 Group 3 : Group of 1 indoor unit with 2 remote controllers and 1 Lossnay® unit in interlocked operation.
 Group 4, 5 : Group of multiple groups and 1 Lossnay® unit in interlocked operation.

Multiple Refrigerants System



- Group 1 : Group of 1 indoor unit and 1 Lossnay® in interlocked operation.
 Group 2 : Group of multiple indoor units (with different refrigerants) and 1 Lossnay® unit in interlocked operation.
 Group 3 : Group of multiple indoor units (with same refrigerant) and 1 Lossnay® unit in interlocked operation.

Lossnay Function Table (Interlocked Settings)

Item		Details
Number of indoor units that can be set to interlocked operation with 1 Lossnay unit in each group		16 units per group
Number of Lossnay units that can be set to interlocked operation with 1 indoor unit		1 unit
Independent start/stop of ventilation (Lossnay)		Possible
Delayed operation (Optional setting)		30 minute delayed operation when indoor unit cooling/heating is started
Fan speed switching	Indoor unit compatible with both R22 and R410A	High/Low
	Units other than the above	Fixed to high
Ventilation mode		Fixed to automatic
Filter maintenance indicator		3000 hours / 1500 hours / 4500 hours / No display
Error		Display
Restrictions and precautions		* Lossnays cannot be interlocked to the indoor units using K-transmission converter.

Controller Function Table especially on the Lossnay unit

Model		Local Remote		
		Lossnay M-NET remote controller	ME remote controller	MA remote controller
		PZ-52SF-E	PAR-F27MEA	PAR-21MAA
Operation	Start/Stop	○	○	○
	Fan speed switching	○	○	○
	Ventilation mode switching	○	× (Automatic)	× (Automatic)
	Priority instructions. Local permitted/prohibited	×	×	×
Monitoring	Status (Operation/Stop)	○	○	○
	Fan speed switching	○	○	○
	Ventilation mode	○	×	×
	Error	○	○	○
	Error content	○	○	○
	Filter sign	○	○	○
	Local permitted/prohibited	○	○	○
Scheduling/Recording	Weekly	×	× (Daily)	×
	Stop/Starts per day	×	2	8
	Stop/Starts per week	×	×	8 x 7
	Minimum setting (minutes)	×	10	1 min. increments
	Error record	×	×	×

Switches and display ○ : Function available × : Not available

● For details about the operation or display of the remote controller (PAR-F27MEA, PAR-21MAA), please refer to those Manuals.

MA Remote Controller/ME Remote Controller in Combination with Lossnay M-NET Remote Controller

System

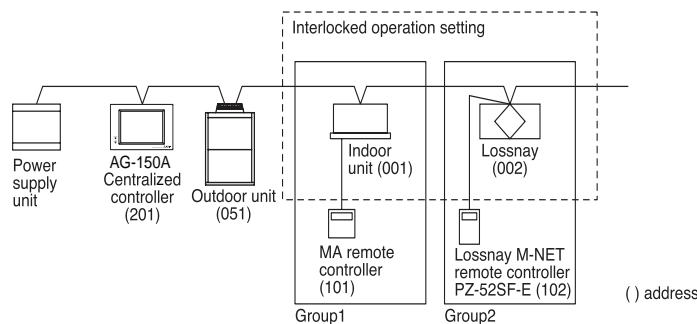
The MA remote controller, ME remote controller, and Lossnay M-NET remote controller can be used in combination.

Combination of Air Conditioner Remote Control and Lossnay Remote Control

Indoor Unit	Lossnay LGH-RX type
Model for MA remote control (Type C or later)	O
Model for other than MA remote control (Type B or earlier)	×

O : Compatible × : Incompatible

System Examples: 1



Setting Method

- (1) Make the Group setting for the indoor unit.
- (2) Make the Group setting for the Lossnay unit.
- (3) Set the indoor unit and Lossnay unit in interlocked operation.

When using the centralized controller, make both the Group setting and operation setting for the previously mentioned units.

Characteristics

- (1) When the indoor unit is set for interlocked operation in 1 group:
 - Interlocked operation with the indoor unit from the air conditioner remote controller is possible and can switch between High/Low/Off.
 - From the air conditioner remote controller it is possible to switch the Lossnay only between High/Low/Off.
 - From the Lossnay remote controller it is possible to switch the Lossnay between High/Low/Off.
- (2) When the 2 or more indoor units with different group are set for interlocked operation, the Lossnay will operate if at least 1 group operates. The Lossnay will stop operation if all groups stop operation.
 - From an air conditioner remote controller it is possible to switch the Lossnay only between High/Low when other groups are operating.
 - From the Lossnay remote controller it is possible to switch the Lossnay between High/Low/Off.

Note:

- If the display on the MA remote controller/ME remote controller, or other air conditioner remote controller, is cancelled, the air conditioner remote controller will not show the ventilation display even if you operate the Lossnay from the Lossnay M-NET remote controller.

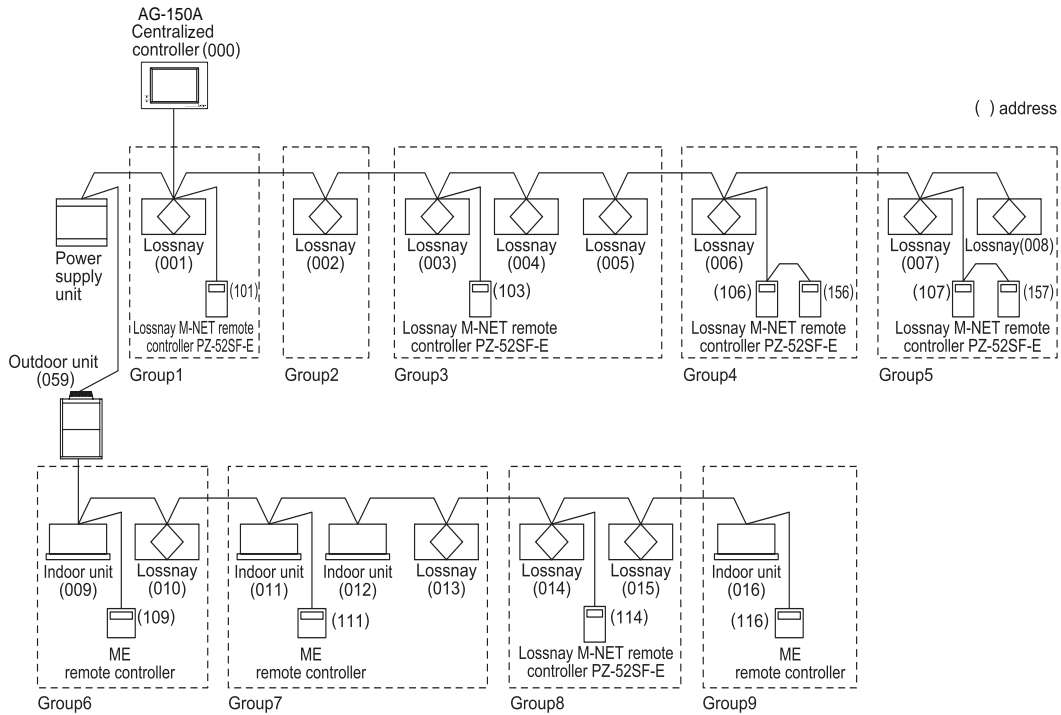
Note:

Transmission cable power control for indoor units
 Be sure usage is within the following boundaries.

- Indoor units + ME remote controllers (compact remote controllers) + Lossnay M-NET remote controllers is less than or equal to 40 units.
- Indoor units are less than or equal to 20 units.
 (The numbers of MA remote controllers and Lossnay units are not included in the above number of units.)

System Examples: 2

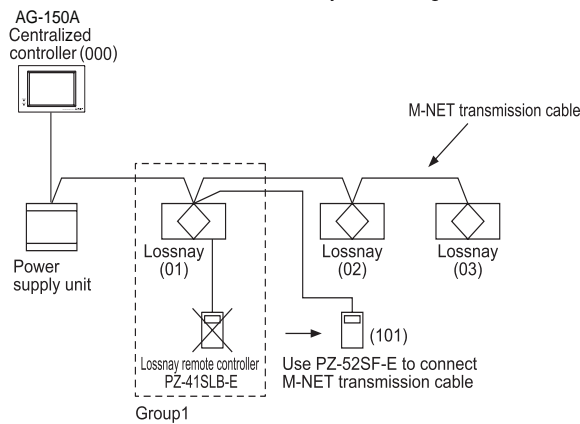
A mixed system including the CITY MULTI can also be configured.



- Group 1 : Group of 1 Lossnay unit and 1 Lossnay M-NET remote controller.
- Group 2 : Group with no Lossnay M-NET remote controller.
- Group 3 : Group of multiple Lossnay units and 1 Lossnay M-NET remote controller.
- Group 4 : Group of 1 Lossnay unit and 2 Lossnay M-NET remote controllers.
- Group 5 : Group of multiple Lossnay units and 2 Lossnay M-NET remote controllers.
- Group 6 : Group of 1 indoor unit and 1 Lossnay unit in interlocked operation.
- Group 7 : Group of multiple indoor units and 1 Lossnay unit in interlocked operation.
- Group 8 : Group of multiple Lossnay units connected to an indoor unit transmission cable and 1 Lossnay M-NET remote controller.
- Group 9 : Group with no Lossnay units.

Note:

- Do not use Lossnay remote controller PZ-41SLB-E in case of a system using M-NET transmission cable.



When Using the LonWorks® Compatible Adaptor (LMAP03U) to Connect to LonWorks®

By using the LON® adaptor (model name: LMAP03U), it is possible to control and observe Lossnays® on a building management system using the LonWorks®.

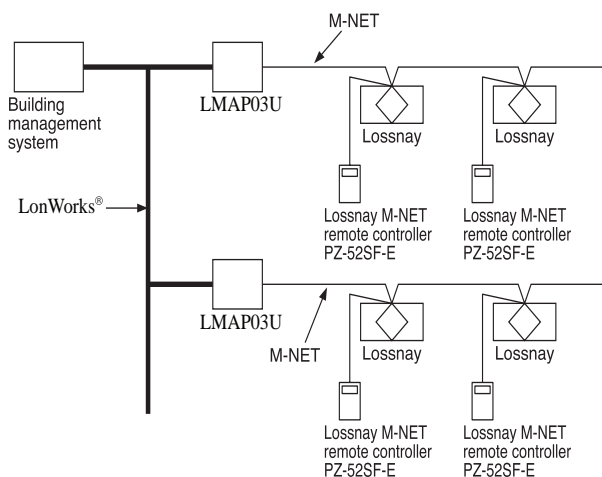
- For specifications and functions of the LON® adaptor, refer to the materials regarding the LonWorks® compatible adaptor.

Table of Functions

	Contents	Individual Lossnay (Lossnay not set for interlocked operation)	Interlocked Lossnay (Lossnay set for interlocked opera- tion with City Multi)
Operation	ON/OFF	○	×
	Change fan to High/Low	○	×
	Change ventilation mode	○	×
	Local prohibit ON/OFF	○	×
Observation	Operation condition	○	×
	Fan speed	○	×
	Ventilation mode (conditions)	○	×
	Errors	○	○
	Filter maintenance sign	○	×
	Local prohibit ON/OFF state	○	×

System Example

(Using M-NET)



Connect the M-Net transmission cable to TB5 A,B of the Lossnay terminal block.

The Lossnay remote controller (PZ-41SLB-E) cannot be used with this system.

Up to 50 units can be connected with one LMAP03U (The LGH-F1200RX) type should be counted as two. For details about the system or connection cables of the LMAP03U, refer to the technical materials, etc., regarding the LMAP03U.

* LonWorks® is a registered international trademark, registered in the U.S.A. to the Echelon Corporation.



Performance Certified
to ARI 1060 Standard